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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**INFORMATION WARFARE OFFICER RETENTION:
USING A CAPABILITIES-BASED ASSESSMENT TO
SOLVE RETENTION ISSUES**

by

Robert A. Linn

December 2009

Thesis Advisor:
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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
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1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE December 2009	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE Information Warfare Officer Retention: Using a Capabilities-based Assessment to Solve Retention Issues			5. FUNDING NUMBERS	
6. AUTHOR(S) Robert A. Linn				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) This thesis uses the Joint Capabilities Integration and Development System (JCIDS) Capabilities Based Assessment (CBA) in an attempt to provide both monetary and nonmonetary solutions to the problem of low retention rates among Naval Information Warfare Officers (IWOs) in pay grades O-4 and O-5. An initial Functional Area Analysis (FAA) looks at Critical Skills Retention Bonuses (CSRBs), military retention factors, and IW community manning data. A Functional Needs Analysis (FNA) looks into historical IW retention issues, and compares the pay of an IW officer to that of a civilian in an equivalent job. Retention issues are found by analyzing IW community-specific data from Defense Management Data Center (DMDC) from 1997 through 2007. Analysis shows that, overall, historical retention is low at both O-4 and O-5, and that prior enlisted status, rank, and source of commission all play a role in this poor retention rate. A Functional Solutions Analysis (FSA) recommends a monetary CSRB and nonmonetary solutions. To evaluate the effectiveness of these solutions, an IW retention survey was administered to Naval Postgraduate School (NPS) IWOs. This survey shows that, in addition to the monetary and nonmonetary solutions found in the FSA, the IW community might be able to improve retention further by focusing on improving IW leadership and community direction.				
14. SUBJECT TERMS Retention, Manpower, Manning, Personnel, Critical Skills Retention Bonus, Capabilities Based Assessment, Information Warfare Officer, Functional Area Analysis, Functional Needs Analysis, Functional Solutions Analysis, prior enlisted, source of commission, survey, monetary solution, non-monetary solution			15. NUMBER OF PAGES 254	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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**INFORMATION WARFARE OFFICER RETENTION: USING A
CAPABILITIES-BASED ASSESSMENT TO SOLVE RETENTION ISSUES**

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Submitted in partial fulfillment of the
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MASTER OF SCIENCE IN HUMAN SYSTEMS INTEGRATION

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ABSTRACT

This thesis uses the Joint Capabilities Integration and Development System (JCIDS) Capabilities Based Assessment (CBA) in an attempt to provide both monetary and nonmonetary solutions to the problem of low retention rates among Naval Information Warfare Officers (IWOs) in pay grades O-4 and O-5. An initial Functional Area Analysis (FAA) looks at Critical Skills Retention Bonuses (CSRBs), military retention factors, and IW community manning data. A Functional Needs Analysis (FNA) looks into historical IW retention issues, and compares the pay of an IW officer to that of a civilian in an equivalent job. Retention issues are found by analyzing IW community-specific data from Defense Management Data Center (DMDC) from 1997 through 2007. Analysis shows that, overall, historical retention is low at both O-4 and O-5, and that prior enlisted status, rank, and source of commission all play a role in this poor retention rate. A Functional Solutions Analysis (FSA) recommends a monetary CSRB and nonmonetary solutions. To evaluate the effectiveness of these solutions, an IW retention survey was administered to Naval Postgraduate School (NPS) IWOs. This survey shows that, in addition to the monetary and nonmonetary solutions found in the FSA, the IW community might be able to improve retention further by focusing on improving IW leadership and community direction.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	EXPLANATION OF THE THESIS.....	1
	1. The Problem.....	1
	2. The Human Systems Integration (HSI) Approach.....	2
	3. The Joint Capabilities Integration and Development System (JCIDS) Process.....	3
	4. Measuring Solution Effectiveness.....	5
B.	OBJECTIVES OF THE STUDY.....	6
	1. Scope.....	6
	2. Limitations.....	7
C.	IW COMMUNITY BACKGROUND.....	7
II.	LITERATURE REVIEW.....	9
A.	OVERVIEW.....	9
B.	UNITED STATES NAVY MANNING POLICY.....	10
C.	THE MILITARY CSRB.....	11
	1. Department of Defense CSRB Policy.....	12
	2. Department of the Navy CSRB Policy.....	12
	3. N1 CSRB Recommendations.....	13
	4. Intelligence Officer CSRB.....	13
	5. HHS CSRB.....	14
	6. SWO CSRB.....	15
	7. Efficient Compensation.....	20
D.	UNITED STATES NAVY RETENTION.....	21
	1. Introduction, Definitions, and Retention Factors.....	21
	2. Retention Issues.....	22
	3. Why People Leave.....	24
	4. Accessions, Lateral Transfers, and Retention Rates.....	27
	5. The Prior Enlisted Factor.....	29
	6. Retention Trade-offs.....	35
	7. Nonmonetary Ways to Improve Retention.....	36
E.	RETENTION SURVEYS.....	39
	1. Web-based Surveys.....	39
	2. Choice-based Conjoint Surveys.....	39
	3. Combinatorial Auction Theory.....	40
F.	THE CURRENT MILITARY POPULATION.....	40
G.	IW COMMUNITY DATA.....	42
III.	APPROACH.....	55
A.	OVERVIEW.....	55
B.	FUNCTIONAL AREA ANALYSIS (FAA).....	56
	1. Summary of Area Analysis.....	56
	2. Possible IW Capability Gaps.....	57

3.	Scenario One.....	58
4.	Scenario Two	59
5.	FAA Conclusions.....	59
C.	IDENTIFYING RETENTION NEEDS.....	60
1.	Data Description	60
2.	Procedure	62
3.	Confounding Variables	64
4.	Predictor Variables	65
D.	IDENTIFYING CIVILIAN EQUIVALENT PAY	67
1.	Procedure	67
2.	Concerns and Assumptions	69
IV.	RESULTS	71
A.	OVERVIEW	71
B.	IW RETENTION DESCRIPTIVE STATISTICS.....	71
1.	Pay Grade.....	72
2.	Gender	74
3.	Family Status	74
4.	Education	74
5.	Source of Commission.....	76
6.	Race or Ethnicity	79
7.	Jobs by NOBC.....	79
8.	Prior Enlisted	81
C.	IW RETENTION INTERACTIONS.....	82
1.	Pay Grade by SoC.....	83
2.	Prior Enlisted by SoC	84
D.	MODELING IW RETENTION	85
E.	LONGITUDINAL MONTHS OF IW SERVICE	86
F.	IW CIVILIAN EQUIVALENT PAY	89
1.	IW Officer Civilian Equivalent Pay.....	89
2.	Difference between IW Civilian Equivalent and Military Pay	91
V.	FSA DISCUSSION.....	93
A.	OVERVIEW	93
B.	FNA SUMMARY.....	93
1.	Significant Results	93
2.	Areas for Improvement	94
C.	FUNCTIONAL SOLUTION ANALYSIS.....	94
1.	Improve Retention of IWOs at the Grade of O-4.....	95
2.	Improve Retention of IWOs at the Grade of O-5.....	96
3.	Improve Retention of Prior Enlisted Officers Commissioned via ROTC and the Naval Academy	96
4.	Improve Retention of Non-Prior Enlisted Officers Commissioned via OCS/OACS/OTS	96
D.	CSRB CONSIDERATIONS.....	96

VI.	MEASURE OF SOLUTION EFFECTIVENESS	99
A.	INTRODUCTION.....	99
B.	SURVEY REPORT OVERVIEW.....	99
C.	SURVEY METHODOLOGY	100
1.	Target Population	100
2.	Instrument Review and Pretesting	100
3.	Fielding Procedures and Response Rates	100
D.	RESULTS.....	101
1.	Analysis Approach	101
2.	Respondent Demographics	101
3.	Detailed Survey Results	105
E.	DISCUSSION OF SURVEY RESULTS.....	128
1.	Discussion.....	128
2.	Recommendations.....	129
VII.	CONCLUSION.....	131
A.	OVERVIEW	131
B.	FAA REVISITED	131
C.	FNA REVISITED	131
D.	FSA REVISITED	132
E.	SOLUTION EFFECTIVENESS REVISITED.....	132
F.	OVERALL CONCLUSIONS.....	133
G.	RECOMMENDATIONS FOR FUTURE RESEARCH	134
	APPENDIX A. DESIGNATOR END-STRENGTH BY RANK FOR FYS92-02.....	137
	APPENDIX B. IW PERSONNEL TEMPO DESCRIPTION	141
	APPENDIX C. IW RETENTION SURVEY INSTRUMENT.....	143
	APPENDIX D. IW RETENTION SURVEY CONTACT E-MAILS	179
	APPENDIX E. IW RETENTION SURVEY QUESTION 3 OPTIONS.....	183
	APPENDIX F. IW RETENTION SURVEY QUESTION 4 HISTOGRAMS AND OPTIONS.....	187
	APPENDIX G. IW RETENTION SURVEY QUESTION 8 OPINIONS.....	195
	APPENDIX H. IW RETENTION SURVEY QUESTION 10 OPINIONS	203
	APPENDIX I. IW RETENTION SURVEY QUESTION 12 OPINIONS.....	205
	APPENDIX J. IW RETENTION SURVEY QUESTION 16 HISTOGRAMS AND OPTIONS.....	207
	APPENDIX K. IW RETENTION SURVEY QUESTION 24 OPINIONS	215
	LIST OF REFERENCES.....	223
	INITIAL DISTRIBUTION LIST	227

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LIST OF FIGURES

Figure 1.	The CBA Process (After Joint Chiefs of Staff, J-8, 2006)	5
Figure 2.	SWO Length of Service (LOS) (From Department of the Navy, N1, 2002)	17
Figure 3.	Survival Rate of Warfare/Non-Warfare-Qualified RL/Staff Officers (From Monroe & Cymrot, 2004).....	28
Figure 4.	URL Retention to LCDR by Community (From Bernard, 2002)	29
Figure 5.	Officer Separation by YOS (From Korkmaz, 2005)	32
Figure 6.	Prior vs. Nonprior Unconditional Continuation Rate for Marine Officers (From Bise, 2008)	34
Figure 7.	2003 Officer Corps Makeup (From Mooney & Cook, 2004).....	44
Figure 8.	2008 IW LOS by Pay Grade (From BUPERS 315, 2008).....	51
Figure 9.	Officer Separation by YOS (URL and RL, 1983-1990) (From Korkmaz, 2005)	51
Figure 10.	Perceived IW Community Values vs. Future Opportunities Desired (From BUPERS 315, 2008)	53
Figure 11.	The CBA Process (From Joint Chiefs of Staff, J-8, 2006)	55
Figure 12.	Description of Data Matching	61
Figure 13.	Partition Regression Tree	83
Figure 14.	Difference in Retention Rates by Pay Grade for OCS and ROTC SoCs.....	84
Figure 15.	Difference in Retention Rates of SoCs by Prior Enlisted Status.....	85
Figure 16.	Retention Model with Major Interactions.....	86
Figure 17.	LOS After IW Designation	87
Figure 18.	O-3 Length of IW Service Before Leaving	88
Figure 19.	O-4 Length of IW Service Before Leaving	88
Figure 20.	O-5 Length of IW Service Before Leaving	89
Figure 21.	Participant Pay Grades.....	102
Figure 22.	Participant LOS in the IW Community	102
Figure 23.	Participant SoC	103
Figure 24.	Participant Age	103
Figure 25.	Years of Prior Enlisted Service	105

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LIST OF TABLES

Table 1.	Annual Steady State Costs and Savings (\$M).....	14
Table 2.	Retention Definitions (From Korkmaz, 2005).....	21
Table 3.	SWO Turnover Factors (From Stoker & Crawford, 2008).....	26
Table 4.	Career Motivators (From Stoloff et al., 2006)	27
Table 5.	Restricted Line Retention by Source and Community (Years 1983-90) (From Bernard, 2002).....	30
Table 6.	Web-Based Survey Positives and Negatives (After Denmond, Johnson, Lewis, & Zegley, 2007)	39
Table 7.	FY 04 AD Officers and Accessions by Race and Ethnicity (From Department of Defense, 2006)	41
Table 8.	FY 04 AD Married Officers by Gender and Service (From Department of Defense, 2006)	42
Table 9.	FY92-FY10 IW Community (1610 and 1640 Only) Reported End Strength/OPAs	45
Table 10.	Loss Behavior of IWOs FY03–FY08.....	46
Table 11.	IW Gains from Fys03-08 for Designators 1610 and 6440.....	47
Table 12.	IW Lateral Transfer Selectees from FY97 to FY08.....	48
Table 13.	IWs Selected for Advancement in Zone for FY03–08.....	49
Table 14.	October 2008 IW Billets.....	50
Table 15.	IW Jobs by NOBC Used to Find Civilian Equivalent Pay.....	68
Table 16.	Pay Grade Description	72
Table 17.	Pay Grade Categorical Differences	73
Table 18.	Gender Description.....	74
Table 19.	Family Status Description.....	74
Table 20.	Education Description.....	75
Table 21.	Education Categorical Differences	76
Table 22.	Source of Commission Description.....	77
Table 23.	SoC Categorical Differences	78
Table 24.	Race or Ethnicity Description	79
Table 25.	Jobs by NOBC Description.....	80
Table 26.	Jobs by NOBC Categorical Differences.....	81
Table 27.	Prior Enlisted Description	82
Table 28.	IWOs Leaving Prior to 10 YOS in the IW Community.....	89
Table 29.	Conversion of Top 15 IW Jobs by NOBC	90
Table 30.	IW Civilian Equivalent Pay Wages	91
Table 31.	Difference Between IW Civilian Equivalent and Military Pay	92
Table 32.	Factors that Negatively Affect IW Community Retention	107
Table 33.	Personal Retention Factors by Level of Participant Importance	109
Table 34.	Mean Percentage of CSRB that Participants Would Give Back for Nonmonetary Options.....	117
Table 35.	Mean Likert Scores of IW General Locations and Commands	123

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LIST OF ACRONYMS AND ABBREVIATIONS

AD	Active Duty
ADCD	Active Duty Commissioning Date
ADP	Automated Data Processing
ADSD	Active Duty Service Date
AEDO	Aerospace Engineering Duty Officer
AIR	Aviation Communities
AMO	Aviation Maintenance Officer
AMDO	Aerospace Maintenance Duty Officer
AOCS	Aviation Officer Candidate School
BAH	Basic Allowance for Housing
BAM	Baseline Assessment Memorandum
BAS	Basic Allowance for Sustenance
CAPT	Captain
CBA	Capabilities Based Assessment
CO	Commanding Officers
COLA	Cost of Living Allowance
COMET	Cost of Manpower Estimating Tool
COMMS	Communications
CMD	Command
CNO	Chief of Naval Operations
CDR	Commander
CSRB	Critical Skills Retention Bonus
CWO	Chief Warrant Officer

CT	Cryptology Technician
DFAS	Defense Finance and Accounting Service
DH	Department Head
DLI	Defense Language Institute
DMDC	Defense Management Data Center
DOB	Date of Birth
DOD	Department of Defense
DON	Department of the Navy
ECP	Enlisted Commissioning Program
ENG (GEN)	Engineering (General)
ENS	Ensign
ESOH	Environment, Safety, and Occupational Health
FAA	Functional Area Analysis
FLT	Fleet
FNA	Functional Needs Analysis
FOS	Failed to Select
FSA	Functional Solution Analysis
FY	Fiscal Year
GAO	General Accounting Office
GPA	Grade Point Average
GSA	Global War on Terrorism Support Assignment
HHS	Department of Health and Human Services
HR	Human Resources
HS	High School
HSI	Human Systems Integration

IA	Individual Augmentee
INCONUS	Inside the Continental United States
INTEL	Intelligence Community
IRB	Institutional Review Board
IW	Information Warfare
IWO	Information Warfare Officer
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
LDO	Limited Duty Officer
LOS	Length of Service
LT	Lieutenant
LTJG	Lieutenant Junior Grade
LCDR	Lieutenant Commander
M & P	Manpower and Personnel
MECP	Medical Enlisted Commissioning Program
MOC	Military Occupation Code
NAVADMIN	Naval Administrative Message
NNWC	Naval Network Warfare Command
NOBC	Naval Officer Billet Classification
NON-PROF	Non-Professional
NPRST	Naval Personnel Research, Studies, and Technology
NPS	Naval Postgraduate School
N1	Office of Manpower, Personnel, Education, and Training
OCI	Occupational Conversion Index
OCS	Officer Candidate School

OES	Occupational Employment Statistics
OIC	Officer in Charge
OPA	Officer Programmed Authorization
OPS	Operations
OTC	Officer Training Command
OTS	Officer Training School
PEBD	Pay Entry Base Date
PHS	Public Health Service
RL	Restricted Line
ROTC	Reserve Officer Training Corps
ROTC-C	Reserve Officer Training Corps - Contract
ROTC-S	Reserve Officer Training Corps - Scholarship
RSE	Relative Standard Error
SDAP	Special Duty Assignment Pay
SoC	Source of Commission
SOC	Standard Occupational Classifications
SPECWAR	Special Warfare Community
SRB	Selective Reenlistments Bonus
SSN	Social Security Number
STA-21	Seaman to Admiral Twenty-First Century
SUB	Submarine Community
SWO	Surface Warfare Officer
SWOCIP	Surface Warfare Officer Career Incentive Pay
SWOCP	Surface Warfare Officer Continuation Pay
TEMPSEP	Temporary Separation Program

TSP	Thrift Savings Plan
URL	Unrestricted Line
USNA	United States Naval Academy
XO	Executive Officer
YG	Year Group
YOS	Years of Service

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EXECUTIVE SUMMARY

This thesis uses the Joint Capabilities Integration and Development System (JCIDS) Capabilities based Assessment (CBA) in an attempt to provide both monetary and nonmonetary solutions to the problem of low retention rates among Naval Information Warfare Officers (IWOs) in pay grades O-4 and O-5. The IW community needs to find a way to encourage officers in these pay grades to remain in service longer.

An initial Functional Area Analysis (FAA) looks at Critical Skills Retention Bonuses (CSRBs), military retention factors, and IW community manning data. This analysis shows that 44% of the IW community is prior enlisted, and finds possible reasons why these officers might not stay past 20 years of service (YOS). A Functional Needs Analysis (FNA) looks into historical IW retention issues, and compares the pay of an IW officer to that of a civilian in an equivalent job.

Historical retention issues are found by analyzing IW community-specific data from DMDC for 1997 through 2007. The FNA shows that, overall, historical retention is low at both O-4 and O-5, and that prior enlisted status, rank, and source of commission all play a role in this poor retention rate. Additionally, the FNA finds that an IW O-4 with 18 YOS or more earns on average \$12,700 less annually than his or her civilian counterpart's 75th-percentile wage. An IW O-5 with 20 YOS or more earns slightly more than his or her counterpart's 75th-percentile wage.

A Functional Solutions Analysis (FSA) suggests both monetary and nonmonetary solutions, including a recommended CSRB, geographical stability, flexible work arrangements, and leadership or educational opportunities. To evaluate the effectiveness of these solutions, an IW retention survey was administered to Naval Postgraduate School (NPS) IWOs. This survey shows

that IW personnel believe that, on average, they can earn \$25,100 more annually in an equivalent civilian job, and 88% of those surveyed think a CSRB would be helpful.

When asked what were the biggest negative IW community retention factors, participants answered (in order of importance): civilian career opportunities, pay, IW leadership, family quality of life, and community direction. When asked what their own biggest negative retention factors were, participants answered (in order of importance): IW leadership, job advancement, education and training opportunities, pay, and career opportunities.

This survey shows that, in addition to the monetary and nonmonetary solutions found in the FSA, the IW community might be able to improve retention further by focusing on improving IW leadership and community direction. This thesis concludes that shortages at O-5 are a direct result of too many prior enlisted officers who are not willing to stay in past retirement eligibility at the O-4 pay grade. While a CSRB may provide a short-term solution, nonmonetary solutions should be considered to provide an increase in long-term retention.

The next recommended step for the IW community is to use the IW retention survey provided in this thesis, adjust it to reflect community solutions, and give it to all IWOs. Analysis of this survey will allow the IW community to make effective decisions, based upon the intended behavior of the community. IW Community leaders should use this thesis and the survey provided to create a capable and cost-effective retention plan for the IW community.

ACKNOWLEDGMENTS

First, and foremost, I thank my wife, Julie, and children, Wynonna and Tristan, for always supporting me in all my endeavors. Without them, there is little meaning to life.

Secondly, my sincerest thanks to my thesis advisor, Dr. Sam Buttrey, and many other NPS professors who assisted along the way, including Dr. Quinn Kennedy, Dr. Rachel Johnson, Dr. Larry Shattuck, Dr. Nita Miller, and Dr. Ji Hyun Yang. Additionally, Dr. Ron Fricker was instrumental in the development and overall success of the IW retention survey.

I would also like to thank my sponsor, BUPERS-315, and CDR Sean Heritage for giving me this thesis opportunity. Additionally, a huge thanks to Mr. Phil Laquinta and Ms. Sandra Southall at NAVPERS, who provided invaluable data throughout this process.

Lastly, I would like to thank all of those IW Officers and NPS students who helped make this thesis a success by participating in survey testing or fielding, and by providing alternative input and ideas. Specific thanks go to CDR Shawn Cowan, CDR Bill Lintz, LCDR Ken Macklin, and LT Brooke Zimmerman.

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I. INTRODUCTION

Human Systems Integration (HSI) emphasizes human considerations in systems design and acquisition to reduce life-cycle costs and optimize system performance (Naval Postgraduate School, 2008). With an emphasis on human considerations, HSI is involved in a multitude of domains, such as manpower, personnel, training, human factors engineering, human survivability, system safety, and health hazards. The field of HSI uses many tools to develop effective solutions to problems within these domains, as well as trade-offs among them. The Joint Capabilities Integration and Development System (JCIDS) is a defense acquisition process available to guide the HSI practitioner. This thesis applies the JCIDS process in an attempt to solve the shortage of Naval Information Warfare Officers (IWOs), particularly at the pay grades of O-4 and O-5.

A. EXPLANATION OF THE THESIS

1. The Problem

The Information Warfare (IW) community is a restricted line community within the United States Navy, with over 900 active duty officers. Currently, the Navy's IWOs work in the fields of Information Gathering and Information Security. Since the IW community places a high value on the skills that Cryptologic Technicians (CTs) learn as enlisted Sailors, it recruits a high number of prior enlisted Sailors into its wardrooms. This method of recruitment results in an operationally proficient wardroom until these IWOs are eligible for retirement. Almost half of all IWOs are prior enlisted.

Due to their prior enlisted service, many IWOs become eligible for retirement earlier than non-prior enlisted officers do. As senior Lieutenants (LTs) and junior Lieutenant Commanders (LCDRs), they retire in larger-than-normal numbers and leave a significant gap in manning levels, especially at the next highest pay grade. In 2008, manning at the

IW O-5/Commander (CDR) rank fluctuated between 72% and 79%. Manning in other IW ranks has remained at or above 85%.

In order to persuade prior enlisted IWOs to stay in the Navy beyond their 20-year milestones, the IW community needs to find a way to encourage this commitment. It feels that a monetary incentive to increase retention after 20 years of service (YOS) may be a good solution. Before drawing any conclusions, however, the IW community decided that more research was needed in this area. This thesis is part of that research.

Rewarding prior enlisted, midgrade (O-4) and control-grade (O-5) IWOs may help the community's immediate manning issues, but it may not be the best solution in the long run. There may be other, more effective alternatives, which have fewer long-term effects and lower costs. This problem needs a holistic approach, which identifies possible alternatives and recommends solutions, while ensuring the effectiveness of those solutions. The JCIDS process can provide the right approach to finding effective solutions for manning shortages.

2. The Human Systems Integration (HSI) Approach

There are two well-used definitions of HSI. According to the Naval Postgraduate School (NPS), HSI emphasizes human considerations in systems design and acquisition to reduce life-cycle costs and optimize system performance (Naval Postgraduate School, 2008). According to the defense field of acquisitions, HSI is the integrated analysis, design, and assessment over the lifecycle of a system and associated support infrastructure in the domains of manpower, personnel, training, human factors engineering, personnel survivability, habitability, and environment, safety, and occupational health (ESOH) (Secretary of the Navy, 2008).

As defined by NPS, HSI actually works in eight domains. These domains are similar to the domains used in the field of acquisitions; however, ESOH is split into both System Safety and Health Hazards. The NPS domains listed below are the eight HSI domains used in this thesis.

- Manpower
- Personnel
- Training
- Human Factors Engineering
- Human Survivability
- Habitability
- System Safety
- Health Hazards

While HSI is clearly defined as a field used by acquisition management, HSI is also a process that can address issues in the design or redesign of any acquisition system that involves humans. This process takes into account the issue(s), the HSI domains, and the trade-offs among those domains. For example, when we lower manning levels without sufficient automation, we increase workload, increase safety hazards due to that workload, and decrease habitability.

Of the eight specific HSI domains, Manpower, Personnel, Habitability, and Training are related to this IWO retention issue. Manpower, Personnel, and Habitability are discussed extensively, while Training is covered briefly. Initially, retention of IW control-grade officers is a manpower issue, since the IW community is undermanned in this area. This thesis recommends solutions that involve both manpower and personnel policies and the effect of those policies on personnel habitability, as they relate to the IW community.

Retention problems can contain a complex variety of subordinate issues. To assist in the organization and problem approach, part of the defense acquisition requirements process, called the JCIDS Capability Based Assessment (CBA), is used.

3. The Joint Capabilities Integration and Development System (JCIDS) Process

The primary objective of the JCIDS process is to ensure that joint warfighters receive the capabilities required to successfully execute the missions

assigned to them (Chairman of the Joint Chiefs of Staff, 2007). The JCIDS process helps the Joint Requirements Oversight Council (JROC) in assessing military capabilities and acquisitions. This involves looking at current capability gaps, prioritizing needs, and finding solutions that fill those capability gaps. The JROC can then recommend which solutions are best to begin or continue the acquisition design/redesign process.

The HSI practitioner can use this process to help military decision makers prioritize capability needs, solutions, and alternatives. The JCIDS process begins with a Capabilities Based Assessment (CBA). The CBA is a holistic process that allows the HSI practitioner to systematically address capability gaps, identify needs, and find solutions. This thesis uses the JCIDS CBA process to perform a functional area, needs, and solution analysis for the IWO retention problem. It is important to note that this thesis was written prior to the new DOD instruction 5000.02, which modified the CBA process.

The Functional Area Analysis (FAA) includes an overview of current military compensation strategies, retention issues, and an in-depth view of the IW community. The Functional Needs Analysis (FNA) takes an analytical approach, looking at historical retention levels and retention trends to find capability gaps and areas for concern. The Functional Solutions Analysis (FSA) provides both monetary and nonmonetary solutions for the IW retention problem. This CBA process is shown in Figure 1, and can be found in DOD instruction 5000.2, and the related JCIDS J-8 CBA user guide.

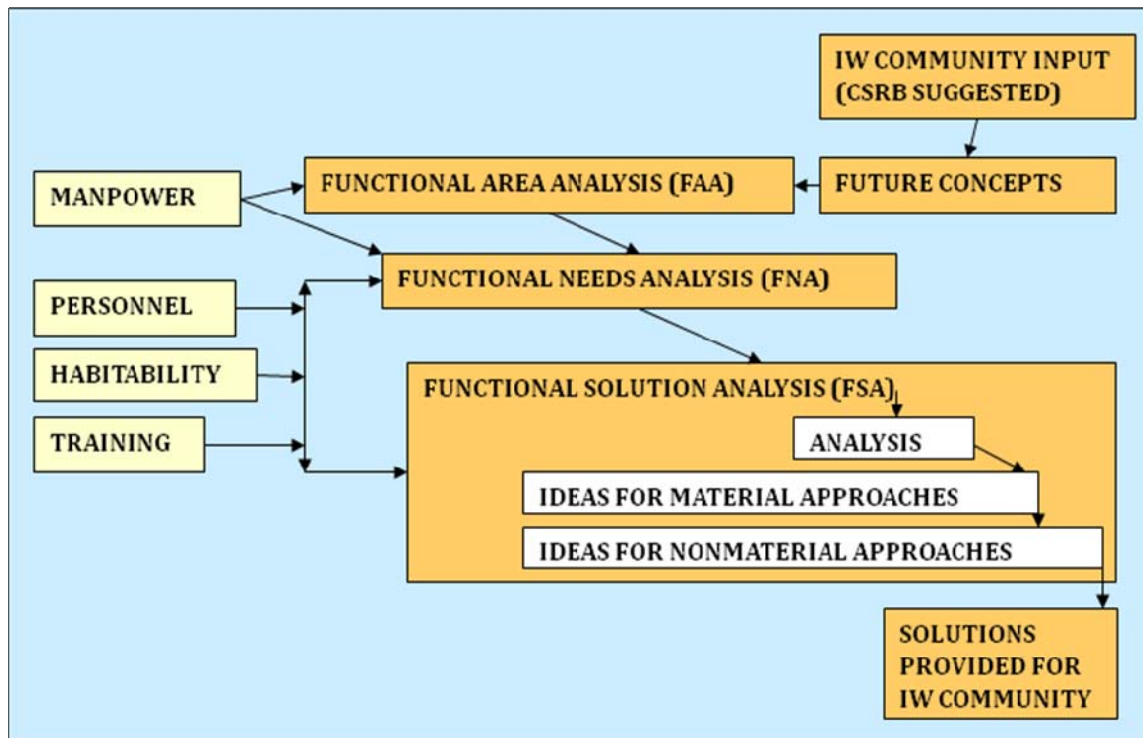


Figure 1. The CBA Process (After Joint Chiefs of Staff, J-8, 2006)

Start at the top right of this modified JCIDS model, where the IW community has suggested a possible Critical Skills Retention Bonus (CSRB). This is the strategic guidance input, or future concept idea, shown in the upper right of the model. This input is a conceptual request for research into the redesign of IWO policy to increase retention at control-grade levels. From this, the model flows left into the FAA, where the IW manpower issues and suggested solutions are identified. Then, the FNA includes four of the HSI domains identified on the left as Manpower, Personnel, Habitability, and Training. After the FNA, this process goes to the FSA. During the FSA, the model shows the materiel and non-materiel approaches. The IW community is provided with multiple solutions, as shown at the bottom right.

4. Measuring Solution Effectiveness

The Navy cannot afford to implement manning strategies that are ineffective or have costly side effects. Decision makers can decide who will pay

for a new strategy and how much they can afford, but they must have a reliable list of effective solutions. Part of the HSI approach is to ensure that solutions are effective for the end user. Rather than provide only recommendations to the IW community that may or may not work, a basic measure of solution effectiveness is provided. While it is impossible to know all of the side effects, all of the time, it is critical to think about these effects early in the decision-making process. The initial measure of effectiveness is the results and feedback from an IWO survey.

To measure the effectiveness of the recommended solutions, data from a survey of NPS IWOs is provided. Thirty-four NPS IWOs provided input and feedback on IW retention and an IW CSRB. The focus of this survey is to find out whether the affected IWOs will accept and support the solutions that may be implemented. This should give the IW community an in-depth understanding of the issues, the possible solutions, and the IWOs response to those solutions.

B. OBJECTIVES OF THE STUDY

1. Scope

This thesis analyzes the IW community, midgrade and control-grade retention, and provides solutions with feedback. The focus is on the JCIDS process, monetary incentives, retention, nonmonetary incentives, and prior enlisted officers. While this research will concentrate on the IW community, other communities may also find it of interest. Department of the Navy (DON) Fiscal Year (FY) 96-09 Budgets show that over the last decade, total annual officer gains have decreased, while the number of prior enlisted officers gained each year has remained approximately the same (Department of the Navy, 2009). The percentage of all Navy prior enlisted officers gained each year between 1998 and 2005 averaged 23.5%, while the percentages have increased between the years 2006 and 2008, averaging 34.8%.

While increasing the number of prior enlisted officers may be a good idea for many reasons, officer-manning problems at the O-4 and O-5 pay grades could be a costly side effect. Since the IW community has such a large

percentage of prior enlisted officers, this issue could be a precursor of future manning issues across other communities. While this particular methodology may be helpful to other communities, all communities are not the same, and should be treated independently. These results should not be used beyond the IW community without careful consideration.

In addition to providing solutions for the IW community, this thesis shows that using the JCIDS CBA process can be an effective tool for HSI manpower, personnel, and training practitioners. However, using a holistic approach, and providing initial solution effectiveness, still has limitations.

2. Limitations

This is an analysis of a complex manpower, personnel, and habitability (morale) issue. As such, there is no physical experiment. With no quantitative experiment, it is difficult to account for confounding variables and establish true cause and effect. This will limit the absolute efficacy of this research. However, establishing correlations and accounting for possible confounding variables, may still produce valid recommendations.

Additionally, the effective representation of the NPS IW survey is an issue. These particular survey participants did not accurately represent the IW community. Results may be biased toward men, and those with more experience in the Navy. These results are less useful than if we were to survey a sample from the entire Navy population of IWOs. Other limitations are described where appropriate in future chapters.

C. IW COMMUNITY BACKGROUND

As previously stated, the IW community is a restricted line community within the United States Navy. This community began with a mission of gathering signals intelligence. The IWO was formally known as the Cryptologic Officer before the name changed in 2005. This change was mainly

due to the expanding scope and responsibility of the community. While the community name changed, the officer designators and billets remained the same.

Today, the Navy's IWOs work in the fields of Information Gathering and Information Security. IWOs usually work in one of five areas, commonly described as Electronic Warfare, Computer Network Operations, Psychological Operations, Military Deception, and Operational Security (Joint Chiefs of Staff, 2006). Forty-four percent of IWOs come from the enlisted ranks through various commissioning sources. Many of these prior enlisted officers come from enlisted cryptology ratings.

According to the Navy, all newly commissioned IWOs attend 11 weeks of IW training before going to their first assignment (United States Navy, 2008). Usually, these new officers are sent to one of four locations: San Antonio, Texas; Kunai, Hawaii; Augusta, Georgia; or Fort Meade, Maryland. After this initial tour, many of these officers serve in a deployable status, while others are sent to continue their education. After their second tour, regardless of commissioning source or age, most IWOs are mid-level Lieutenants. Future duty stations focus on four main components: leadership, operational experience, technical competence, and continuing education. It is also important that an IWO be competent in all four areas, and not be limited to one or two kinds of competency.

The IW community currently has over 900 personnel and holds over 1,000 billets, 69% of which are considered shore duty.

II. LITERATURE REVIEW

A. OVERVIEW

This chapter describes the main literature reviewed and information needed to perform an FAA. The need for retaining control-grade IWOs stems from an immediate operational need for these officers. However, the Navy cannot quickly produce control-grade officers for the IW community. Considering how long it takes to “grow” a control-grade officer, and the complexities involved in retention, the implementation of a CSRB for these officers must first be viewed as a perceived need. When beginning an assessment of a perceived need, the JCIDS process recommends a complete initial area analysis (Joint Chiefs of Staff, J-8, 2006).

Section B discusses current Navy manning policies. Section C discusses Navy CSRBs. This includes current Department of Defense (DOD) and Navy retention policies, as well as three examples of Navy CSRBs. Typical CSRB implementation procedures and issues, and how to calculate an initial amount for a CSRB, are also included in section C.

Section D covers military and Navy retention. This begins with retention definitions and factors, moves on to major military retention issues, followed by the reasons that people leave the Navy. Next, it describes specific Navy retention factors and retention characteristics, including lateral transfers and prior enlisted personnel. The last part of Section D includes retention trade-offs and nonmonetary ways to improve retention.

Section E gives a brief description of the advantages and disadvantages of online surveys, and describes two different types of good retention surveys. Section F provides a demographic description of the current Navy, to be used for comparisons in the FNA section. Section G provides available data on the IW community including billets, advancement opportunities, and typical end strength.

B. UNITED STATES NAVY MANNING POLICY

To understand Navy manning policy, it is helpful to start with an overview. Changes in one area may affect another area's mission, environment, resources, and process (Thie, Christian, Stafford, Yardley, & Schirmer, 2008). It is important to identify the pertinent policies, vision, and mission of the involved leadership. This will allow us to identify gaps between leadership desires and suggested solutions. This section provides a general review of policies that affect manning and retention decisions.

In previous years, the DOD has provided guidance to manpower decision makers to make fiscally informed manpower decisions with three things in mind. First, manpower levels should remain at the minimum levels needed to meet workload requirements. Second, the combination of personnel (civilian or military) assigned to missions should be determined using the least costly method. Third, the DOD planning and programming guide should be used when determining acceptable fiscal limits and risks (Thie et al., 2008). Additionally, when civilian personnel are available and can do the job, whether deployed or otherwise, they should be considered for that job (Thie et al., 2008). This may be a policy of interest to any community, when looking at severe manning shortages.

Within the DON, the Office of Manpower, Personnel, Education, and Training (N1) provides input to the Chief of Naval Operations (CNO) and other Navy executives. One type of input includes the Manpower and Personnel (M&P) Total Force Baseline Assessment Memorandum (BAM). This five-year plan proposes key strategies, including minimizing long-term manpower costs, providing positive experiences to Sailors, and aligning the M&P policies with Total Force human resource policies (Department of the Navy, N1, 2002).

Much as it sounds, the Navy's Total Force policy is a single, all-inclusive manning policy for both reservists and active duty (AD) personnel. One of the Total Force issues identified in the BAM is the gap that exists between the Navy's operational requirements and the number of Sailors that it has to fill those requirements. The Navy also has a problem with longevity imbalances in both

the enlisted and officer workforces. In other words, there can be grouping issues where there are too many or not enough Sailors with a particular longevity measured by YOS. This BAM identifies the need for both short-term and long-term actions to mitigate these issues. One suggestion is the targeting of special duty or special skill pay toward projected midgrade shortages in the officer community (Department of the Navy, N1, 2002). This is similar to what the IW community has proposed for control-grade officers.

Currently, there are many kinds of targeted compensation packages within the Navy. Section C discusses one of the major types of compensation—the CSRB.

C. THE MILITARY CSRB

Within the last ten years, the number of bonuses paid to officers has increased. With policies and strategies that support these bonuses, it is not surprising that the IW community identified the CSRB as a solution to its manning problem. Before implementing a CSRB, it is important to look at and identify possible CSRB trends and issues. There are many CSRB examples to look at within the military.

In the Navy, the primary CSRB examples are within the Unrestricted Line (URL) communities including Aviators, Surface Warfare Officers (SWOs), and Submariners. The IW community is not a part of the URL; rather, it belongs to the Restricted Line (RL) community. However, because of the large amount of research that has been done on the URL community's CSRBs, it is useful to look at the URL community that most resembles the IW community. Therefore, the SWO community's CSRB is one of the bonuses reviewed in this section.

Within the RL community, the Navy currently only offers one CSRB, which is for the Intelligence community. Within the Staff Corps, the Department of Health and Human Services (HHS) offers CSRBs to Navy healthcare professionals. Both the Intelligence and Healthcare CSRBs are also reviewed in this section. Relative to the URL CSRBs, less research has been conducted on the smaller RL community and Staff Corps CSRBs.

1. Department of Defense CSRB Policy

The current DoD policy encourages the military services to use retention bonuses as incentives to meet DoD personnel requirements. Specifically, monetary bonuses should be used when other alternatives have proven inadequate, impractical, or less cost-effective. Monetary compensation should be awarded to personnel whose skills are “essential to the accomplishment of defense missions” (Department of Defense, 2005, p. 2). The current directive states that financial incentives are just one element with which to control personnel inventory, and should not be a substitute for good planning and management.

While the CSRB targets personnel with essential skills, there are limitations. To receive a CSRB, an officer must remain on active duty for a period of at least one year. In addition, an officer must not have completed over 25 years of active duty before the end of the period for which the bonus is offered, except in the case of a Healthcare Officer. Lastly, officers receiving the CSRB cannot receive more than \$200,000 in bonuses over the course of their career, nor more than \$30,000 per year (Department of Defense, 2005).

2. Department of the Navy CSRB Policy

In addition to the DoD policy on CSRBs, the DON provides Navy-specific guidance for compensation. This guidance is very similar to the DoD guidance, and states that the rational use of compensation policies can support strategic objectives. The DON supports using CSRBs as a means of effective and cost-efficient recruitment, retention, reward, and motivation, and to facilitate career transitions to sustain the Navy’s Total Force (Force Management Oversight Council, 2005).

In 2004, the Assistant Secretary of the Navy, Manpower and Reserve Affairs gave four guiding principles to support the DON’s guiding compensation strategies (Hansen & Koopman, 2005). One of the strategies listed is Strategic Best Value or Best Value. It states that the DON’s policies should align with

other elements of the larger human capital strategy to produce the highest value. To facilitate this alignment, targeted compensation can provide cost-effective solutions to address service-specific needs (Hansen & Koopman, 2005).

3. N1 CSRB Recommendations

As previously stated, the BAM evaluates all current Navy personnel programs to ensure that they each support M&P strategies. A few of the suggestions focus on Selective Reenlistments Bonuses (SRBs) for enlisted Sailors, as well as Special Duty Assignment Pay (SDAP) and Surface Warfare Officer Continuation Pay (SWOCP) for officers. Money remains one of the most effective ways to increase retention (Department of the Navy, N1, 2002). A recent example of the use of CSRBs is the one currently offered to midgrade Intelligence Officers. N1, however, also recognizes that monetary compensation does not solve all problems. In some cases, nonmonetary incentives are more effective.

4. Intelligence Officer CSRB

After 2001, both the importance of the Intelligence Community and the need to retain Intelligence Officers increased dramatically. Like officers in other communities, Intelligence Officers often get out of the Navy after their initial obligation has ended, which sometimes results in manning shortages. These manning shortages prevented the Intelligence community from meeting operational requirements at the O-4/LCDR level. Offering a CSRB to O-3/LTs between 4 and 10 YOS was one way in which the Intelligence community retained these officers (Department of the Navy, N1, 2002).

To analyze the effects of an Intelligence Officer CSRB, the Navy hired the SAG Corporation to conduct a comprehensive review. The SAG Corporation evaluated econometric relationships and used them to create a baseline behavior for Intelligence Officers. Then they projected end strengths based on this behavior. The retention behavior after CSRB implementation was modeled using pay elasticities (Mackin & Dye, 2001). Additionally, the SAG Corporation gave

an estimated CSRB program cost using the Navy's Cost of Manpower Estimating Tool (COMET), with training cost data from the community manager. Table 1 shows an example of data provided by the SAG Corporation, as reported by N1. This data shows that providing a CSRB costs less annually than not providing a CSRB for the Intelligence community.

Annual Steady State Costs and Savings (\$M)		
Cost Element	Baseline	With CSRB
Billet Costs*	102.4	89.5
Training Costs	1.6	1.4
CSRB Cost	0	2.8
Total Annual Cost	104.0	93.7
Net Annual Savings	-----	10.3

**Includes \$10.3K per student for initial training.*

Table 1. Annual Steady State Costs and Savings (\$M)

Since there was no data showing the Intelligence Officer CSRB take-rate (the rate at which officers accept or decline the CSRB), this was estimated using the take-rate among participants in the Nuclear Program SWOs. Retention studies for the RL communities often use examples and data from the URL communities. This is because there is no available econometric study of RL community officer retention behavior. Other communities could have been used in the model, but the Nuclear SWO results provided the most conservative estimates of retention effects (Mackin & Dye, 2001).

N1's risk assessment at that time was a moderate-high (on a scale of low, moderate, high), based on the cost of operational billet gaps. As with the current IW community, the Intelligence community was in danger of losing over 20% of its Officer Programmed Authorization (OPA; the number of officers authorized) at O-4/LCDR. This report showed that "a modest investment in CSRB is viewed as the best alternative to reduce risk" (Department of the Navy, N1, 2002, p. 88).

5. HHS CSRB

The *Department of Health and Human Services (HHS) Commissioned Corps Personnel Manual (2003)* gives insight into the detailed requirements,

eligibility, and implementation of the Healthcare CSRB program. This instruction identifies all the specific rules by which the military medical officers of the Public Health Service (PHS) can be given the Healthcare CSRB including eligibility, obligation, payment, contract, repayment, and termination.

Currently, the HHS offers CSRBS to 19 Healthcare specialties such as nurses, anesthesiologists, radiologists, and surgeons. In order to be eligible for the HHS CSRBS, medical officers must work for three or more years in their qualifying specialty, in addition to currently using 75% or more of their workday performing the duties of the qualifying specialty. They must also have attained the appropriate training, certification, or degree for their field (Department of Health and Human Services Public Health Service, 2003).

These requirements are a good example of just how selective a community can be before authorizing the eligibility of a service member for a CSRB. Instead of changing the number of personnel eligible for the CSRB program, HHS has put in place specific training and requirements to ensure that only those personnel with desired qualifications get a CSRB. In other words, they improve the quality of the CSRB taker, without decreasing the pool of takers. This could prove to be an effective tool during times when fewer CSRB takers are desired.

6. SWO CSRB

Retention of SWOs has been an issue for decades, going back to the 1960s. In 1999, the Secretary of the Navy authorized Surface Warfare Officer Continuation Pay (SWOCP) (Wahl & Singh, 2006). Today, there are four bonus programs for a non-nuclear SWO: two for junior officers and two for more senior officers. Of the two programs for more senior officers, one, called the Expanded SWOCP, is for department heads (O-3 and O-4) who are still fit for sea duty. Another bonus is the Senior SWOCSRB or the Senior SWO Bonus. The Senior SWO Bonus is aimed at O-5s and O-6s who serve in critical positions identified by the CNO (Department of the Navy, 2005; Department of the Navy, N1, 2002).

Of the four bonuses, the expanded SWOCP and Senior CSRB can be identified as more critical, since it takes 10–15 years to “grow” a midgrade (O-4) SWO or 15–20 years for a control-grade (O-5) SWO (Department of the Navy, N1, 2002). As with the Intelligence Officer CSRB, the BAM report identifies the costs of the SWO programs. These include the installments, commitments, and budgeting required for a CSRB. Like officers from the Intelligence and IW communities, SWOs are getting out at a certain YOS and in large enough numbers to cause concern.

The SWO community has not met its OPA since 1993. Figure 2, from the N1 BAM, shows a SWO Length of Service (LOS) Distribution. This LOS distribution shows shortages at mid-grades and control-grades (Department of the Navy, N1, 2002). The yellow background shows the OPA levels that were authorized. The blue bars show the actual end-strength levels (number of personnel) reported at the end of the FY. The dashed lines show the differences in pay grade. The x-axis represents LOS, and the y-axis represents the number of personnel allowed in yellow, and present (end strength) in blue.

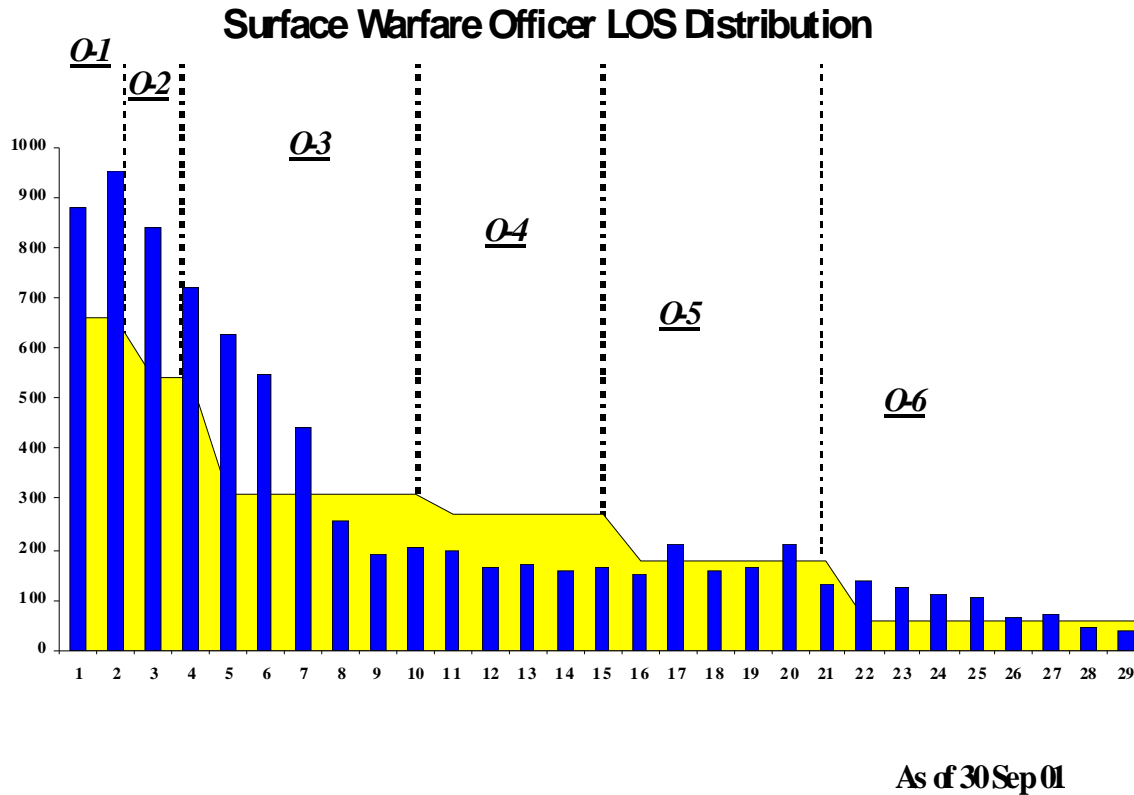


Figure 2. SWO Length of Service (LOS) (From Department of the Navy, N1, 2002)

Figure 2 shows that for SWOs with LOS 9–15, the SWO community is approximately 100 personnel short for each YOS. The SWO community's OPA was approximately 2,100 (7 years x 300 authorized) personnel for those seven undermanned LOS years. Manning was at approximately 1,400 (7 years x 200 available) personnel. That is an OPA gap of approximately 33% for YOS 9-15 during FY01. Additionally, we can see how many more SWOs are being recruited above OPA on the left, just to meet the desired end strength at more senior YOS.

Today, the SWO community is still trying to find a better way to retain its officers. Strict monetary incentives have not been as effective as originally thought. Stoker and Mehay (2005) found that the SWOCP appears to be less effective at retaining women than men. Their data came from the 2004 SWO Quick Poll Survey. While 67% of men felt that their Department Head (DH) tour

decisions would be impacted by the current SWOCP (\$50,000), only 52% of women felt likewise. This gender gap grows with the proposed size of the bonus. While 72% of men felt that a \$100,000 bonus would increase their desire to stay, only 27% of females felt the same (Stoker & Mehay, 2005). Since 2004, 13%–19% of women still report money does not influence their retention decision as much as their male counterparts (Stoker & Crawford, 2008).

Filip (2006) suggested that the implementation of a bonus auction might be more effective than a strict bonus. The current system gives the same bonus to all officers, when only some may require that much of a monetary incentive. A bonus auction allows those officers who will stay for less money, to stay for that amount, allowing them to “outbid” their peers. The difficulty is ensuring that the most skilled and motivated personnel are as likely to win the auction bonus as those who are less motivated or skilled (Filip, 2006). While this new solution may make the bonus more efficient, it does not account for the retention of personnel who are less motivated by monetary incentives.

Rather than fix this imbalance by giving all SWOs more money, Stoker and Mehay (2005) suggest that the SWO community offer a one-year sabbatical leave program. They assert that more money will not permanently fix cultural issues and is, at best, a temporary solution. Targeting this program to high-risk officers is the biggest challenge. The Navy will preserve the pay and allowances of officers who choose the sabbatical rather than a normal shore tour. However, even the addition of nonmonetary solutions does not tell us the possible take-rate behavior of SWOs toward these programs.

Because of the unknown take rate, Stoker and Mehay (2005) suggest conducting interviews of SWOs to collect information and develop questionnaires. These questionnaires should be developed into a survey to find out what SWOs value the most before making retention solution recommendations. They suggest interviewing three groups—AD, recently separated, and lateral transfers—with males and females interviewed separately within these groups (Stoker & Mehay, 2005).

After the interviews, the Navy should develop a conjoint-based survey to determine the relative value that each officer places on a variety of monetary and nonmonetary factors that influence his or her SWO retention decision. Flexible work arrangements, 360-degree feedback, mentoring programs, and additional family support programs are also recommended, but to a lesser extent (Stoker & Mehay, 2005). This same methodology may be useful to the IW community.

In the original study of the implementation of the SWO Career Incentive Pay (CIP), the positive factors associated with the monetary incentive were increased retention, alleviation of short-term manning problems, and the retention of high-quality personnel (Mackin & Darling, 1996). This study quoted cost savings, since the higher bonus payments were cheaper than the overall decrease in work-years or billet costs. The report suggests implementing the SWOCIP; however, it also states that the magnitude of cost savings is sensitive to the assumptions made regarding responsiveness (take-rate behavior). This is still true today, and the SWO community is still having trouble meeting its OPA. The SWO community failed to account for the poor take-rate behavior of SWOs toward the SWOCIP, which might have been foreseen earlier with a valid SWOCIP take-rate survey. Such a take-rate survey was suggested twice in the original SWOCIP paper (Mackin & Darling, 1996).

After the fact, the Navy has sent out several surveys about implementing the SWOCIP. The issue with these surveys is that they tend to focus on the overall minority of personnel who are interested in staying in the Navy for the money. The Navy should be looking at the retention of the majority of respondents, including those who are not as persuaded by the SWOCP (Wahl & Singh, 2006). The IW community should carefully examine both the mistakes and successes of the SWO community's efforts to retain their officers.

While these studies provide invaluable insight into officer CSRB methodology, Kleinman and Hanson (2005) provide some additional key points of note:

- Nonpay-related attributes of the military can increase or reduce compensation values.
- A holistic approach is needed when planning compensation packages.
- The Navy should give people choices when those choices do not negatively affect the military mission. Often, this is more cost-effective than generalized bonuses.

7. Efficient Compensation

Researchers have used several techniques to find the most efficient amount of money to offer in a CSRB. These methods include complicated statistical formulas like those used by the SAG Corporation, retention surveys, and figures based on civilian equivalency pay. There is no perfect number when it comes to retention CSRBs, especially when there are nonmonetary issues involved. While looking at retention relative to military enlisted compensation and civilian equivalent pay, Hansen (2000) found that those highly technical enlisted ratings, with the higher civilian equivalent salaries, had the most severe manning problems. However, these ratings also had the highest military compensation levels.

Hansen (2000) linked enlisted Navy ratings to their civilian equivalents and evaluated many factors, including the wages military personnel could make if working in their civilian equivalent job. He found that the Defense Manpower Data Center (DMDC) had created a “crosswalk” that links Navy officer and enlisted ratings to a 5-digit Occupational Employment Statistics (OES) code (Defense Manpower Data Center, 2001). This OES code is used by the Bureau of Labor Statistics to evaluate a plethora of employment statistics on each occupation code. Hansen suggests using the Occupational Conversion Index (OCI) to convert military occupations by job and specialty before looking up the data for that occupation (Department of Defense, 2001). In 2004, however, the National Crosswalk Service Center adopted DMDC’s creation into an easily accessible Web site with Military Occupation Code to Standard Occupational

Classifications (MOC-SOC) conversions. This is a convenient way to find out a how much an IWO can earn in the civilian workplace, and could be used as a starting place for a CSRB amount.

D. UNITED STATES NAVY RETENTION

Looking at manning policies and current monetary incentives is important. However, these sections give only limited insight into the complex personnel retention issues the Navy currently faces. This section identifies the Navy's retention issues, the reason our personnel leave, and possible solutions.

1. Introduction, Definitions, and Retention Factors

Retention is defined as a person, or a number of personnel, voluntarily deciding to stay in the Navy after being eligible to leave. Related retention and turnover definitions can be found in Table 2.

Term	Definition
Turnover	The number of people who leave the organization
Retention	The opposite of turnover; the number of people who stay
Turnover Rate	$\text{Number of employees that left during time } x \div \text{Average total number of employees during time } x$
Involuntary Turnover	Personnel who are involuntary discharged or terminated
Voluntary Turnover	Personnel who leave by their own choice

Table 2. Retention Definitions (From Korkmaz, 2005)

Retention is an issue in all organizations. If an employee leaves the organization, there is usually a negative impact. This impact is due to decreased productivity, costs to hire a new employee, etc. (Korkmaz, 2005). There can also be negative impacts on employee morale and organizational culture. In the Navy, low retention (high turnover) increases overall personnel cost, decreases officer quality, increases recruiting efforts, and reduces overall productivity (Korkmaz, 2005).

There are many reasons why Navy personnel voluntarily leave. The most significant of these factors are pay, age, tenure, number of dependents, organizational commitment, and satisfaction with work, coworkers, and

supervisors (Korkmaz, 2005). Other studies have looked at specific community retention. Messmer and Pizanti (2007) looked at DMDC data from 1990 to 2005, and analyzed demographics, professional characteristics, and military experience as retention factors in the Navy Nurse Corps. He found that retention in the Nurse Corps was positively correlated with being a male, a minority, having dependents, being prior enlisted, having a subspecialty beyond general nursing, and having a postgraduate degree (Messmer & Pizanti, 2007).

Stoker and Crawford (2008) looked at the SWO community and found that mentoring was an indirect retention factor. They also found a positive correlation between experienced officers and junior officer retention (Stoker & Crawford, 2008). Regardless of the community, retention issues are complex and span many factors; thus, there are different retention views and theories.

2. Retention Issues

There are several ways to view retention issues. From an economic point of view, the military pay table is not sensitive enough to provide optimal pay across various pay grades and jobs (Rosen, 1992). This is just one explanation of why the Navy must give bonuses to meet the demand for the retention of specific personnel. Additionally, times are changing. Staying in the military for 20 years to get a pension does not influence as many people as it used to. Economic incentives built into the system depend on how a person perceives the costs and benefits of that system and the incentives offered (Rosen, 1992). While this statement is from a slightly older review of retention, it still holds true today.

Another economic theory likens military service to an “experience good,” stating that only after individuals enter the military do they find out whether or not they like it (Asch & Warner, 2001). At this point, most of those who do not like military service leave at the end of their obligation. The real question is why do other personnel stay? The military has several factors that are uncommon in the civilian workplace, like the loss of personal freedom, increased danger, and

frequent family separations. It is because of these unusual job-related factors that the reasons personnel remain in the military vary widely (Asch & Warner, 2001).

Asch and Warner (2001) found that it is this heterogeneity of reasons that help the military retain senior enlisted personnel. These same personnel are highly skilled and motivated. If their preferences are not met, the military could see these personnel leave (Asch & Warner, 2001). Accordingly, the more types of retention programs available, the more preferences that can be met and the more personnel the Navy will retain.

Retention is not always about constantly improving, either. The downside of improving Navy retention is to improve it too much. Then, senior personnel would not retire or leave and the promotion opportunities for more junior personnel would decrease. This would result in a decrease in the productivity of these personnel and create manning issues in the more junior ranks (Asch & Warner, 2001). It is easier to “grow” junior personnel than senior personnel, so over-retention of senior personnel may be preferred. However, this method may decrease the morale of junior personnel. It is often difficult to change the negative cultural impact of poor morale within a large organization like the military.

The military has had duty rotations for much of its existence; however, rotations have specific identified effects, such as high turnover and lower performance (Kleinman & Hansen, 2005). Leadership can be affected by rotation, also. Frequent rotations can separate decisions from outcomes, contributing to both conservative and risky decisions, depending on the leader. Other rotation issues that can have a negative effect on retention include children’s education, schools, dependent special health needs, and recreational interests (Kleinman & Hansen, 2005).

This should lead one to ask if rotational duty is necessary. It is (Kleinman & Hansen, 2005). The military needs to have a system that rotates personnel to and from dangerous or less-desirable duty, as well as to relieve worn-out Sailors.

Without rotational duty, personnel may identify more with their job than with the Navy, or units may begin to form their own culture, contrary to the Navy's mission (Kleinman & Hansen, 2005).

While these retention issues are clear, there is specific military and Navy community research that has tried to find out exactly why undesired personnel turnover continues.

3. Why People Leave

The United States military has a unique work force. In 2004, the average LOS was less than ten years (Department of Defense, 2006). As previously discussed, the military usually wants to keep a younger force and prevent a top-heavy rank structure. The military also moves personnel regularly. Civilian jobs with similar lifestyles include police officers, miners, corporate executives, and physicians (Department of Defense, 2006). While many companies may ask their managers and executives to move, the rest of the organization usually remains stable. Between 2000 and 2001, 37% of military personnel moved to a new residence, compared with 15% of civilians (Department of Defense, 2006).

The military lifestyle can have a negative effect on family life. Shift work, unpredictable hours, and overnight duty make the scheduling of family life difficult. Enlisted service members self-report working about 54 hours per week, while officers work almost 60 hours per week (Department of Defense, 2006). Family responsibilities among military personnel have grown, as have marriage rates and the numbers of women, single parents, and dual-service couples (Department of Defense, 2006). Frequent relocation can cause a number of family problems. Children must adjust to a new area, friends, school, and school curricula. In addition, military spouses are disadvantaged in the job market because of their temporary status (Department of Defense, 2006; United States General Accounting Office, 2002).

Over the last 40 years, military spouses have become a larger part of the workforce, much as civilian spouses have. This, combined with the military's quick job rotation, is likely one of the reasons for today's retention issues

(Kleinman & Hansen, 2005). Kleinman and Hansen (2005) found that military spouses are often not employed full time, nor do they make as much as their civilian counterparts. This is true for both male and female spouses. This means it is less likely that a military spouse's career will progress successfully like the career of a civilian spouse. Because of this, Navy families may find it difficult to choose between the two careers (Kleinman & Hansen, 2005). Eventually, if the service member's family is not happy, the member is likely to seek employment elsewhere.

The most evident Navy-specific retention issue of late has been the high turnover within the SWO community. Stoker and Crawford (2008) looked into the factors that influence SWOs to leave the Navy. Some of the factors included monetary incentives, leadership, mentoring, and gender. This report found that the SWOCP might not have as positive an effect as was originally thought. While CSRBs may provide retention for those who are attracted to the monetary value, they do not solve nonmonetary-related issues.

Stoker and Crawford (2008) looked at people that have already left the military, who represent officer year groups from 1983 to 2005. Their findings are shown in Table 3. This report compared men to women, and the older versus younger year groups (1983–1993 and 1993–2005, respectively). Table 3 shows which officers (by sex and age) agreed with the statement in the first column. Most of these factors held strong influence on their decision to get out of the Navy. Blank boxes under the Age column mean there was no indication that those under that column agreed with the statement in the first column.

Findings	Sex (M/F)	Age (Older/Younger)
Family-related factors are the highest rated influence on retention.	Both agree	Both agree
Leadership and culture have more influence than monetary incentives.	Both agree	Both agree
Mentoring is a positive retention tool.	Both agree	
A significant number of personnel would consider returning to the community if improvements to family-related issues and leadership were made.	More F than M agree	
Leadership is the primary topic listed that the SWO community could fix to improve retention.	Both agree	All agree, except F from younger year group

Table 3. SWO Turnover Factors (From Stoker & Crawford, 2008)

In addition to improving leadership and culture, other studies have reported that government-funded education and geographic stability are more likely to improve SWO retention than SWOCP (Stoloff, Monroe, MacIlvaine, & Wills, 2006). In 2004, the Navy Personnel Research, Studies, and Technology SWO Quick-Poll reported that the top five incentives to retain SWOs through their Department Head (DH) tour are:

- Guaranteed funded education after DH tour
- Geographic stability after DH tour
- SWOCP
- Guaranteed lateral transfer after DH tour
- One year unpaid sabbatical

Regardless of community or gender, there are many other positive and negative career motivators, as shown in Table 4. Many times, pay is listed as a reason to stay versus a reason to leave. This may be an indication that personnel do not always leave because of money. While personnel may be retained through monetary increases or bonuses, this does not improve or resolve the nonmonetary reasons they leave.

Reasons to Leave	Reasons to Stay
Possible Death	Rewarding Work
End of Obligation	Pay
Family	Benefits
Homosexuality	Patriotism
Medical	Lack of Other Opportunity
Retirement	
Time Deployed	
Failed to Select	

Table 4. Career Motivators (From Stoloff et al., 2006)

When pay is reported as a reason to leave, it is often reported with many other reasons. In 1999, a DOD survey of AD members found the top five reasons for leaving or considering leaving the military were basic pay (with 28% of respondents choosing this as the #1 reason), amount of personal and family time (9%), quality of leadership (8%), job enjoyment (7%), and disruptive deployments (6%) (Hansen & Koopman, 2005). Whether it is 1999 or 2008, the continuing pattern of retention factors is clear. These factors seem to be the primary reasons personnel leave the Navy.

4. Accessions, Lateral Transfers, and Retention Rates

When looking at different communities' manning and retention issues, it is important to understand the process of accessions and lateral transfers. Community accessions are how a community gains officers. These personnel come from a variety of sources. Most often, junior personnel come from the United States Naval Academy (USNA), Reserve Officer Training Corps (ROTC), or Officer Candidate School (OCS).

Sometimes, these accessions are described as having or not having prior enlisted service. Some of these accessions fail out of their initial pipeline/community and transfer over to another community. These "attrites" are usually not warfare qualified. Other transfers are already warfare qualified and are called lateral transfers. These officers transfer from their original community to another community, usually as an O-3 or O-4.

Accession types add another layer of retention complexity. Within the RL/Staff communities, over 90% of warfare-qualified laterals survive to 9 YOS (108 months), compared with less than 50% of nonwarfare-qualified laterals (Monroe & Cymrot, 2004). Figure 3 shows survival rates to different milestones for warfare-qualified and non-warfare-qualified control-grade officers, based on data from 1986 to 2002.

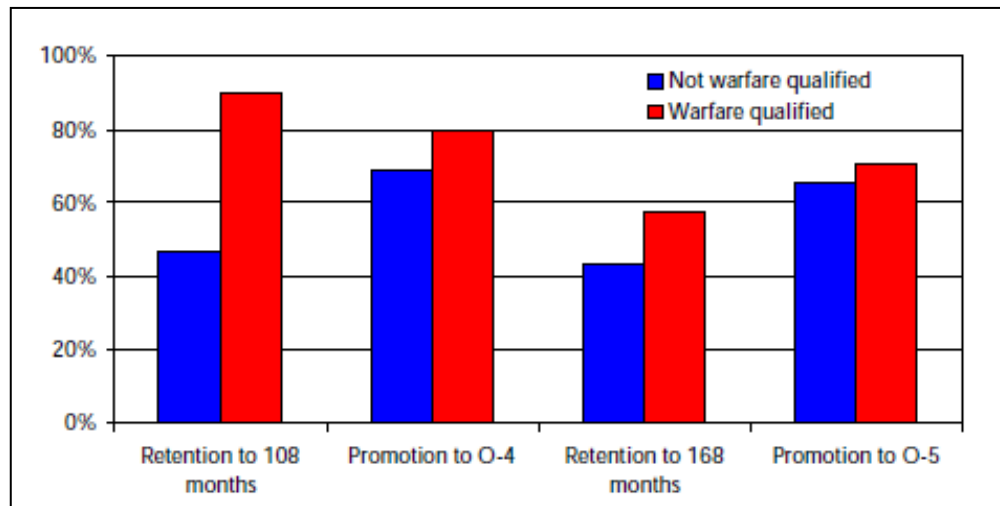


Figure 3. Survival Rate of Warfare/Non-Warfare-Qualified RL/Staff Officers (From Monroe & Cymrot, 2004)

When looking at retention issues, it is important to identify where personnel are coming from and going to, and in what numbers. While the IW community has begun to keep track of these data, it will take years of consistent data collection before historical information like this is fully available. However, data from other communities is available for comparison.

Figure 4 shows the URL retention rates to O-4 by year group and URL communities (SWO, Submariners (SUB), and Aviation (AIR)). During this time, pilots (a portion of the AIR community) and submariners received a career bonus like the CSRB. As shown, between 20% and 35% of officers (Year Groups [YGs] 1983–1990) in the SWO and SUB communities stay until the rank of O-4, whereas the numbers are higher for the AIR community (Bernard, 2002). It is

also noteworthy that 39% of the SWOs who stayed to the O-4 promotion board transferred to SWO from another community (Bernard, 2002).

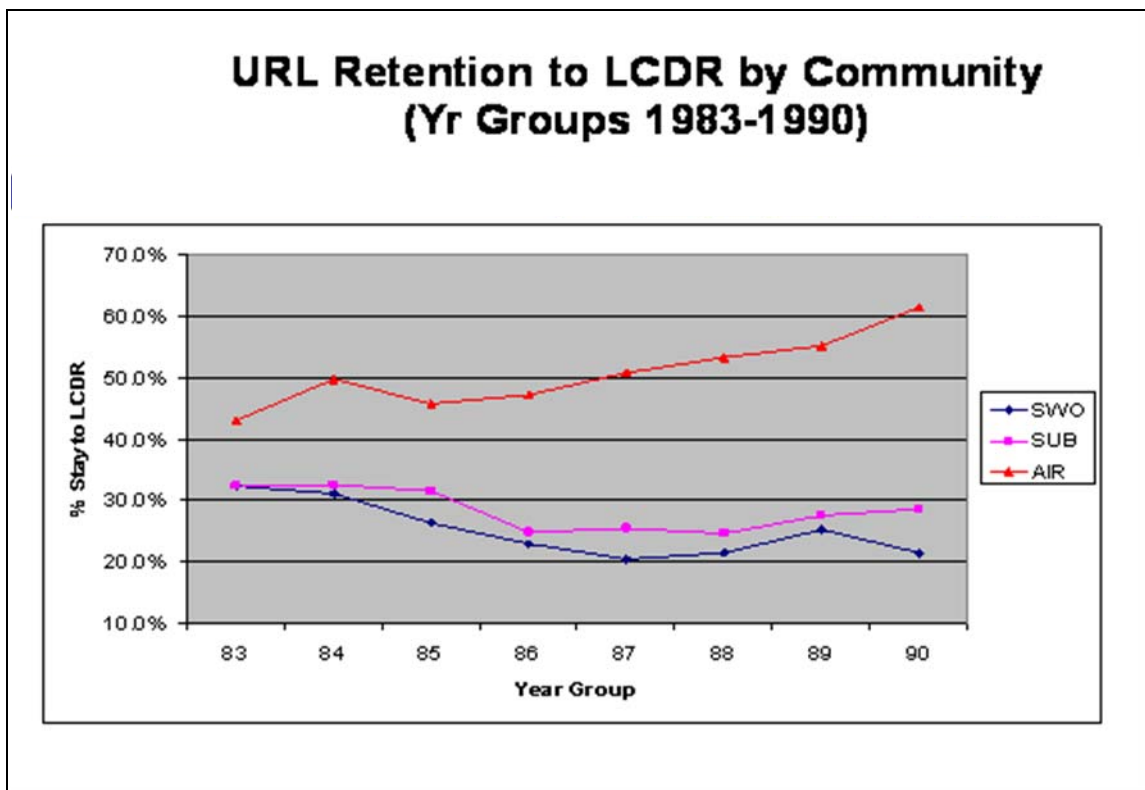


Figure 4. URL Retention to LCDR by Community (From Bernard, 2002)

5. The Prior Enlisted Factor

An important part of the retention equation for the IW community is the possible correlation between prior enlistment and retention. Several studies have looked directly and indirectly at this relationship. Bernard (2002) looked at O-4 retention across commissioning sources from 1983 to 1990. The data show that prior enlisted URL officers are 22% more likely to stay in the Navy to the rank of O-4, than were non-prior enlisted officers commissioned by the USNA, ROTC, or OCS. However, in the RL community, this same percentage decreased to 5%. The reason for this difference between URL and RL is unknown.

Table 5 compares the retention rates of RL officers from different accession sources and communities (Bernard, 2002). It is important to note that these results for the RL communities are very different from results found for officer retention in the URL communities, and that the numbers in Table 5 include both officers with prior enlisted experience and those without.

CATEGORY	Total Accessed	Total Stay	Retention Rate
Accession Source			
USNA	958	401	41.9%
ROTC-S	1,020	399	39.1%
ROTC-C	177	97	54.8%
OCS	2,924	1,615	55.2%
ECP	50	28	56.0%
Community			
Fleet Support	1,365	627	45.9%
Supply Corps	1,980	900	45.5%
RL and Staff	1,784	1,013	56.8%

Table 5. Restricted Line Retention by Source and Community
(Years 1983-90) (From Bernard, 2002)

In Table 5, ECP refers to prior enlisted officers commissioned through the Enlisted Commissioning Program. When looking at retention to the O-4 promotion board, officers commissioned through ECP, OCS, and ROTC-Contract (ROTC-C) remain on active duty 15% more than accessions from the USNA and ROTC-Scholarship (ROTC-S). While ECP accounted for a very small fraction of the total RL sample (less than 1%), it had the highest retention rate of any of the accession sources. In terms of size, OCS made up the largest proportion of officers. 57% of the RL officers from OCS were retained, and had the second highest retention rate (55.2%) to the grade of O-4.

While 100% of ECP graduates are prior enlisted officers, the other accession sources also contain some prior enlisted officers. Of these programs, OCS has the largest percentage of prior enlisted officers, at approximately 30% of all OCS graduates (Watson, 2001).

Today, we should expect to see OCS graduates make up a smaller proportion of total accessions. Before 1989, when the majority of the data used in Table 5 were gathered, OCS graduates made up between 30% and 50% of total FY officer gains. OCS graduates have made up fewer than 12% of total officer gains each year since 1996 (Department of the Navy, 2008).

As previously stated, the percentage of newly-acquired prior enlisted officers between 1998 and 2005 averaged 23.5% annually, while the average percentage from 2006 to 2008 was 34.8%. If prior enlisted officers still stay in the Navy to O-4 at a higher rate than non-prior enlisted officers do, as described by Bernard (2002), and approximately half of the IW community is prior enlisted officers, then we should expect IW retention to O-4 to be high. IW retention at all pay grades is shown in Chapter IV.

Officers with prior enlisted experience have longer service lengths than their non-prior enlisted peers (Korkmaz, 2005). Since these officers are able to adapt easily, and transfer their enlisted experience to their officer careers, they are expected to have improved job performance, better promotion opportunities, and serve longer in the Navy. Additionally, officers with high undergraduate grade point averages (GPAs) and technical majors are also expected to serve longer (Korkmaz, 2005).

Figure 5 gives a good picture of when officers normally separate from the Navy by YOS. As shown, there are two major spikes in officer turnover, at 4–5 and 10–12 YOS, respectively. Turnover at 4-5 YOS is mainly due to officers voluntarily leaving at the end of their initial term of obligated duty. Some officers stay and remain for duty at the department head level. This can incur another term of obligated service due to a tour obligation, or a community bonus obligation. When this obligation is over, some officers voluntarily leave, often between 10 and 12 YOS.

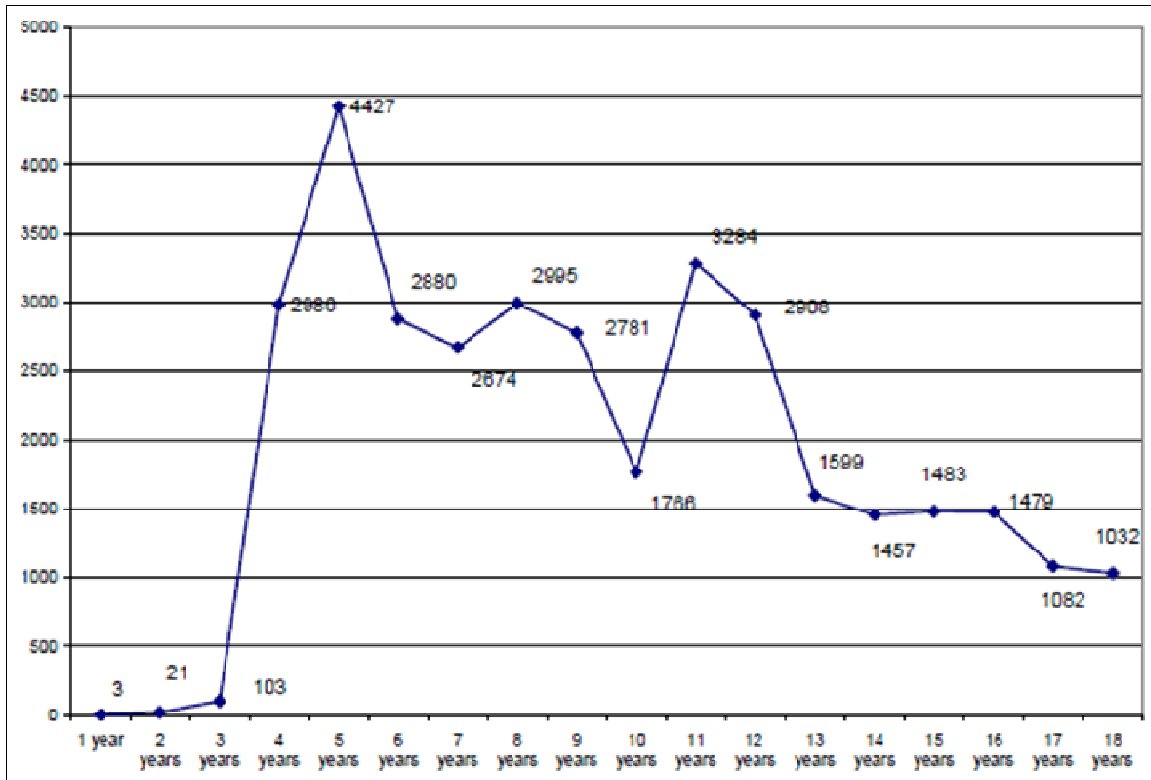


Figure 5. Officer Separation by YOS (From Korkmaz, 2005)

Turnover at 10-12 YOS is also around the time of promotion to LCDR/O-4. Some officers involuntarily leave because they Failed to Select (FOS). FOS happens when an officer is involuntarily separated because he or she is not promoted to the next rank, which is, in this case, LCDR/O-4. After the second turnover spike in Figure 5, the number of turnovers gradually lessens (Korkmaz, 2005).

In his 2005 research, Korkmaz found that among the Navy's officers, those commissioned by the USNA are more likely to be retained than those who are not USNA graduates. Korkmaz also suggests that communities that acquire more prior enlisted officers have fewer retention problems. This is similar to other research suggesting that the Naval Nurse Corps increase its Medical Enlisted Commissioning Program (MECP) accessions (Messmer & Pizanti, 2007). One of the problems with these recommendations, however, is that prior

enlisted officers can retire at a lower rank than non-prior enlisted officers can. This may create manning gaps at grades higher than O-4.

Figure 5 shows typical officer separation patterns. In a common scenario, prior enlisted officers average approximately 8 or 9 years of enlisted service before being commissioned. While the second spike in turnover is normally at 10–12 YOS, this scenario adds 8–9 YOS for prior enlisted officers. This moves the prior enlisted turnover spike significantly to the right to 18–21 YOS. In this scenario, prior enlisted officers would be faced with the end of their department head tour obligation as an officer, FOS, or retirement around 20 years of service. All of this is as a senior O-3 or O-4. Additionally, there is only one retention program in place for officers at this point in their career (the Senior SWO Bonus). In this same timeframe, the Navy's biannual pay raises cease, producing what is often referred to as a pay scale cap.

Bise (2008) looked at the effect of pay scale caps on prior enlisted Marine officers. The pay scale for a prior enlisted Marine officer is the same as for a prior enlisted Navy officer. Both Navy and Marine Corps prior enlisted officers in pay grades O-3E to O-7 stop receiving biannual longevity pay at 18 YOS. The only pay raise received after this point is an annual Cost of Living Allowance (COLA), intended to ensure government salaries keep up with inflation (Bise, 2008).

Based solely on experience and performance, the Navy and Marine Corps would probably retain highly trained officers for a full 30 YOS (Bise, 2008). However, for reasons discussed in this chapter, Section D, subsection 2, the military tries to maintain a younger work force. Not everyone can stay in the military for 30 years. Besides the need for young Soldiers, Marines, and Sailors, there cannot be more leaders than followers. There must be incentives for personnel to retire or there will be too many senior-ranking personnel to fill a small number of senior-ranking billets (Bise, 2008).

If, however, the Navy or Marine Corps experiences a drop in manning at these higher-ranking levels, it may desire a policy that includes the increase of longevity pay past 18 years. This, however, is not cost-efficient. It is doubtful that the military will change the base pay scale for a possible short-term manning shortage. Bise (2008) describes other barriers to retaining control-grade prior enlisted officers, including fewer wage increases and older children in high school or college. Many midgrade and control-grade officers are also young enough to start another career.

As shown in Figure 6, Bise found that after the 20-YOS mark, prior enlisted Marine Corps officers retire at higher rates than non-prior enlisted officers do; however, this is not due to the cessation of longevity pay (2008). Even though they retire at higher rates, they are also more likely to stay up to 26 YOS than a non-prior enlisted Marine Corps officer (Bise, 2008). One reason officers may elect to stay past 20 years is the 2.5% increase in retirement pay they receive for each additional year after year 20.

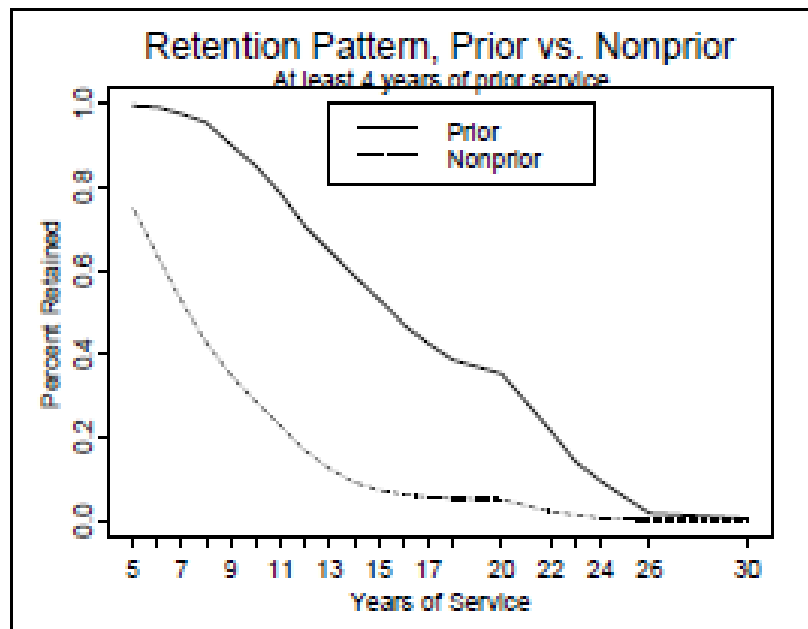


Figure 6. Prior vs. Nonprior Unconditional Continuation Rate for Marine Officers (From Bise, 2008)

6. Retention Trade-offs

There is relatively little military-based research available on retention trade-offs; however, CSRB auctions and retention trade-off survey research has increased over the last few years. One such study looked at how enlisted Sailors make trade-offs between the monetary and nonmonetary quality of service factors listed below:

- Basic pay
- Sea pay
- SRBs
- Different methods of SRB payment
- Thrift Savings Plan (TSP) matching contributions
- Obligation lengths
- Assignment guarantees
- Working in rate
- Promotion schedules
- Detailer contacts
- Guaranteed time for voluntary education
- Shipboard habitability
- In-port housing while on sea duty

Researchers found that nonmonetary factors have a significant impact on enlisted reenlistment intentions (Kraus, Lien, & Orme, 2003). The two factors with the largest positive effect on reenlistment were location and duty-type assignment guarantees. These two were valued the same as a 4%–6% pay increase (approximately \$125.00 per month for an E-5 with 6 years service). Matching TSP also had a large positive impact. The factors with the largest negative impact on reenlistment intentions are requiring Sailors to live on-board ships while in port and granting later-than-expected promotions. These could be offset by a 13% and 8% pay raise, respectively (\$325.00 and \$200.00 for an E-5

with 6 years' service) (Kraus et al., 2003). While this survey was tailored for enlisted Sailors, officers may feel the same way.

7. Nonmonetary Ways to Improve Retention

While the CSRB and similar bonuses remain one of the most widely used retention tools in the Navy, there are many nonmonetary ways to improve retention. This subsection briefly covers the most common of these. The newest of these retention improvement programs available in the Navy is often referred to as a sabbatical or sabbatical leave. A 2005 survey done by the Society of Human Resource Management found that 17% of employers offered sabbaticals (Stoker & Mehay, 2005).

Stoker and Mehay (2005) found that marriage has a positive retention effect for men, but a negative retention effect for women. This is one reason why a sabbatical program may be beneficial to increase retention, especially for married females. Additionally, some companies use the sabbatical program as a way by which to avoid layoffs during a recession. While the military is not the same as the civilian sector, it may be cost-efficient to offer such programs, specifically tailored to officers who would otherwise not be retained. This program could prove useful to the Navy to absorb over-manning problems by offering sabbaticals to well-trained officers, rather than forcing them out of the Navy through involuntary separations (Stoker & Mehay, 2005).

Some firms use a sabbatical program to offer 4, 6, or 8 weeks of paid time off every 5 years. This gives their employees time to "recharge their batteries." The military, however, offers significantly more leave time per year than most civilian companies do. Rather than offering 1–2 month-long paid sabbaticals, it may be more cost-efficient to take advantage of the leave program in place and ensure that those who transfer can take a minimum of 4–6 weeks of vacation, providing they have enough leave time saved. Sometimes, military personnel are not offered much time off between duty stations. Others find it difficult to take more than one week of leave at a time during their tour of duty. In its currently-

used state, the Navy's leave program is hardly considered a sabbatical, yet it offers the opportunity to be used in conjunction with one.

The United States Coast Guard offers a temporary separation program (TEMPSEP) that began to be used as a retention tool in 2000 (Stoker & Mehay, 2005). This program provides a way for officers and enlisted to be temporarily discharged for up to two years. This gives personnel opportunities to provide for newborn children or pursue personal interests, like education. While this idea should be evaluated and tailored to the Navy, it may be another way in which the Navy could successfully retain those who would otherwise separate from service.

The cost considerations for a sabbatical program should be evaluated carefully. The Navy's current pilot program includes benefits, but not base pay or housing allowances (Stoker & Mehay, 2005). Bonuses are paid, assuming that members return to AD as agreed and scheduled. Manning should also be planned carefully, since a sabbatical program may leave a manning shortage during the first year or two. After that, officers should begin to return from their sabbaticals. While manning levels would need to be carefully calculated yearly or quarterly, the overall manning levels (and cost savings) should stay higher than they would if those personnel were separated permanently (Stoker & Mehay, 2005).

One of the ways in which the military solves small-scale retention issues is to provide selected personnel with educational or specialized training opportunities, or to promise duty locations and types (Kleinman & Hansen, 2005). These are often described as detailer initiatives, where the detailer tries to improve retention by contacting the officer before he or she leaves the Navy (Department of the Navy, N1, 2002). Then the detailer can promise a certain duty or duty type and the member will accept the orders and agree to remain on active duty for a certain number of years or tour length. All communities can use this flexible retention solution.

Flexible work arrangement is another option for improving retention. In a 2000 survey, Mercer found that 66% of companies offer flexible work arrangements—an increase of 40% over the last decade (Stoker & Mehay, 2005). In addition to flexible work arrangements, compressed schedules are currently offered by 20%–40% of large companies (United States General Accounting Office, 2002). While the Navy is interested in these programs, there are few, if any, presently in effect.

Prior studies have also found that work policies can affect the quality of life of employees, by making it easier to meet family needs. Meeting more family needs improves the employee's work performance (Stoker & Mehay, 2005). Improved performance leads to reduced turnover, increased productivity, and reduced absenteeism. Some studies have also found that these policies can indirectly benefit other employees as well (Stoker & Mehay, 2005). These studies show that by improving the quality of life for some employees, other employees can be positively affected by the increased work performance of their coworkers.

Another example of nonmonetary options is providing alternative officer career paths to improve the retention of experienced officers (Department of the Navy, N1, 2002). As previously discussed, switching career paths is often referred to as a lateral transfer. Ideally, communities like to retain their officers. While using lateral transfers as a retention tool would not retain the officer in the community, it may provide a better option than not retaining that officer in the Navy at all. With this program, the community losing that officer may be able to gain another officer of similar rank. While far from perfect, the overall benefit to the community and the Navy may be greater than the loss of experienced officers due to lack of satisfaction within their own community. Current lateral transfers work in this manner, except that the lateral transfer program is often not viewed, or classified, as a retention tool.

In 2002, the General Accounting Office (GAO) reported that private sector benefits over the last decade indicate three main trends: more benefits, with

more flexibility, that focus on the improvement of employee work/life balance (United States General Accounting Office, 2002). These civilian market trends match the latest retention suggestions covered earlier in this chapter. The more effective retention programs that are in place, the more needs the Navy will meet (flexibility), and the more personnel it will retain.

E. RETENTION SURVEYS

1. Web-based Surveys

There are many types of survey data collection methods; however, non-Internet collection methods are beyond the scope of this thesis. There are both positive and negative aspects to collecting data via a Web-based survey. Many of these aspects are shown in Table 6.

Positives	Negatives
Quick delivery and return	Limited population access
Ease of reaching participants	Technology issues
Easily manipulated question formats	Security threats
Customized delivery as applicable	Lack of control
Captures data directly into database	Potential for bias

Table 6. Web-Based Survey Positives and Negatives (After Denmond, Johnson, Lewis, & Zegley, 2007)

The positive aspects of Web-based surveys are fairly well known. It is equally important to minimize the negative aspects as much as possible. Security threats and lack of control issues should be identified and accounted for. A data-safeguarding plan is a good way to minimize some of these negative issues.

2. Choice-based Conjoint Surveys

While a relatively new concept, choice-based conjoint surveys are a good way to look at the trade-offs personnel make when looking at more than one option (Kraus et al., 2003). This survey methodology requires the respondent to choose among two or more options that vary along several dimensions, just as

they might when making a choice. The downside of this method is that the probabilities must be based on a baseline that is set by the researcher. Not having historical data to assist in creating a valid baseline can be challenging. There is little historical retention data available for the IW community.

3. Combinatorial Auction Theory

In a recent study of SWO retention, a group of NPS students used an online survey Web site, called SurveyMonkey (Denmond et al., 2007). The purpose of the study was to view how officers would choose among a variety of incentives, including SWOCP, choice of homeport, billet, or platform. The results show that both a geographical stability option and a monetary option were preferred for the SWO community (Denmond et al., 2007). Additionally, the authors found that the best combination of incentives depends on the preferences of the individual officers. The IW community may want to develop an initial retention factor survey that identifies officer preferences before implementing retention incentives.

This survey represents a successful attempt to gather multifactor retention data from military officers. The use of multiple factors that the participants must choose from, or specifically weigh, may be an effective way in which to gather initial retention preferences from IWOs.

F. THE CURRENT MILITARY POPULATION

In order to analyze IW community demographics, it is necessary to have accurate Navy demographics. The most commonly reviewed demographics are age, race/ethnicity, and marital status. As previously discussed, the military stays younger than the civilian workforce. In FY04, 87% of new AD recruits were 18–24 years of age, compared to 37% of their civilian equivalents. Officers were older than the enlisted personnel (mean ages 34 and 27, respectively), but were also younger than their civilian equivalents (Department of Defense, 2006). The representation of women within the officer corps was 16% (Department of Defense, 2006).

As shown in Table 7, African-American officers make up 8% of all Naval officers. This is similar to the 9% proportion of African-Americans among college graduates in the workforce (Department of Defense, 2006). Asian officers, however, are under-represented, making up 3% of the Navy's officer corps, compared to 9% of college graduates in the workforce. Hispanics are also under-represented at 5% in the officer corps, compared to 7% of college graduates in the workforce (Department of Defense, 2006).

FY 2004 Active Component Officer Accessions and Officer Corps by Race and Ethnicity, by Service (Percent)					
Race and Ethnicity	Army	Navy	Marine Corps	Air Force	DoD
ACTIVE COMPONENT OFFICER ACCESSIONS					
White	74.6	81.6	62.0	77.4	76.7
Black	12.2	7.8	3.8	6.5	8.6
AIAN	0.5	0.5	0.5	0.4	0.5
Asian	4.7	3.7	2.1	4.0	4.0
NHPI	0.0	0.3	0.2	0.2	0.2
Two or more races	0.0	2.3	1.0	2.3	1.4
Unknown	7.9	3.8	30.5	9.3	8.6
Hispanic	5.8	5.2	7.4	3.5	5.0
Non-Hispanic	94.2	94.8	92.6	96.5	95.0
ACTIVE COMPONENT OFFICER CORPS					
White	77.8	84.2	81.0	83.6	81.7
Black	12.4	7.4	5.8	6.7	8.6
AIAN	0.5	0.4	0.6	0.3	0.4
Asian	3.5	3.3	1.7	2.1	2.8
NHPI	0.0	0.1	0.3	0.1	0.1
Two or more races	0.0	0.6	0.9	0.7	0.5
Unknown	5.9	4.1	9.6	6.5	5.9
Hispanic	5.0	5.2	6.2	3.7	4.7
Non-Hispanic	95.0	94.8	93.8	96.3	95.3
Columns may not add to total due to rounding.					

Table 7. FY 04 AD Officers and Accessions by Race and Ethnicity (From Department of Defense, 2006)

While it has already been established that the number of married military members is increasing, Table 8 shows the current number and percentages. The 2004 population also shows that newcomers to the military continue to be

less likely to be married than their civilian equivalents (Department of Defense, 2006). Similarly, all military members continue to be less likely to be married than those in the civilian sector, but the margin is shrinking. Male Naval officers (70%) are more likely to be married than female officers are (47%).

FY 2004 Active Component Officers Who Were Married, and in Dual-Service Marriages, by Gender and Service (Number and Percent)					
Gender	End-Strength	Married		Married Who Were In Dual-Service Marriages	
		Number	Percent	Number*	Percent
ARMY					
Male	57,208	39,806	69.6	2,468	6.2
Female	11,426	5,691	49.8	2,629	46.2
Total	68,634	45,497	66.3	5,097	11.2
NAVY					
Male	44,677	31,203	69.8	1,112	3.6
Female	8,030	3,765	46.9	1,283	34.1
Total	52,707	34,968	66.3	2,395	6.8
MARINE CORPS					
Male	15,778	11,173	70.8	450	4.0
Female	964	396	41.1	273	68.9
Total	16,742	11,569	69.1	723	6.2
AIR FORCE					
Male	60,685	45,083	74.3	4,426	9.8
Female	13,619	7,482	54.9	3,500	46.8
Total	74,304	52,565	70.7	7,926	15.1
DoD					
Male	178,348	127,265	71.4	8,456	6.6
Female	34,039	17,334	50.9	7,685	44.3
Total	212,387	144,599	68.1	16,141	11.2
* There are some differences between the number of males and females reporting dual-service marriages.					

Table 8. FY 04 AD Married Officers by Gender and Service (From Department of Defense, 2006)

G. IW COMMUNITY DATA

The IW community is a relatively small RL community within the Navy. Within the Navy's officer corps, there are specific designators that are used to identify what kind of qualifications an officer has, as well as what community they belong to. The IW community has four such designators, identified by the Navy

as 1600 or 160X, 1640 or 164X, 6440 or 644X, and 7440 or 744X (Naval Personnel Command, 2006). The Designator 7440 (which accounts for 10% of all IWOs) is used for Chief Warrant Officers (CWOs), and is not considered due to their unique characteristics. The remaining designators are:

161X: RL IWO (82% of total with 7440 excluded)

164X: RL IWO in training (8%)

644X: IW Limited Duty Officer (LDO) commissioned directly from the enlisted ranks (10%)

Some of the data in this section uses only 1610 and/or 6440 data, and is identified as such.

Some officer communities have certain qualifications that should be met before personnel can join that community. Waiver requests are accepted, but not always approved. The IW community looks for warfare-qualified officers in the pay grade of LT/O-3 or lower, with a technical background and a college GPA of 2.2 or higher (Korkmaz, 2005). Additionally, these candidates must be eligible for a Top Secret clearance.

The RL is made up of nine main communities. Figure 7 shows a 2003 breakdown of how IWOs (listed as CRYPTO in yellow) fit into the RL community, and how the RL fits into the officer corps as a whole. Aerospace Maintenance Duty Officer (AMDO), Aviation Maintenance Officer (AMO), and Aerospace Engineering Duty Officer (AEDO) are grouped under the orange AEDO. As previously discussed, many of the RL accessions come from the URL. The IW community end strength has grown by more than 200 since 2003. Even with this growth, the IW community makes up 1.6% of the entire Navy officer corps, and approximately 20% of the RL community.

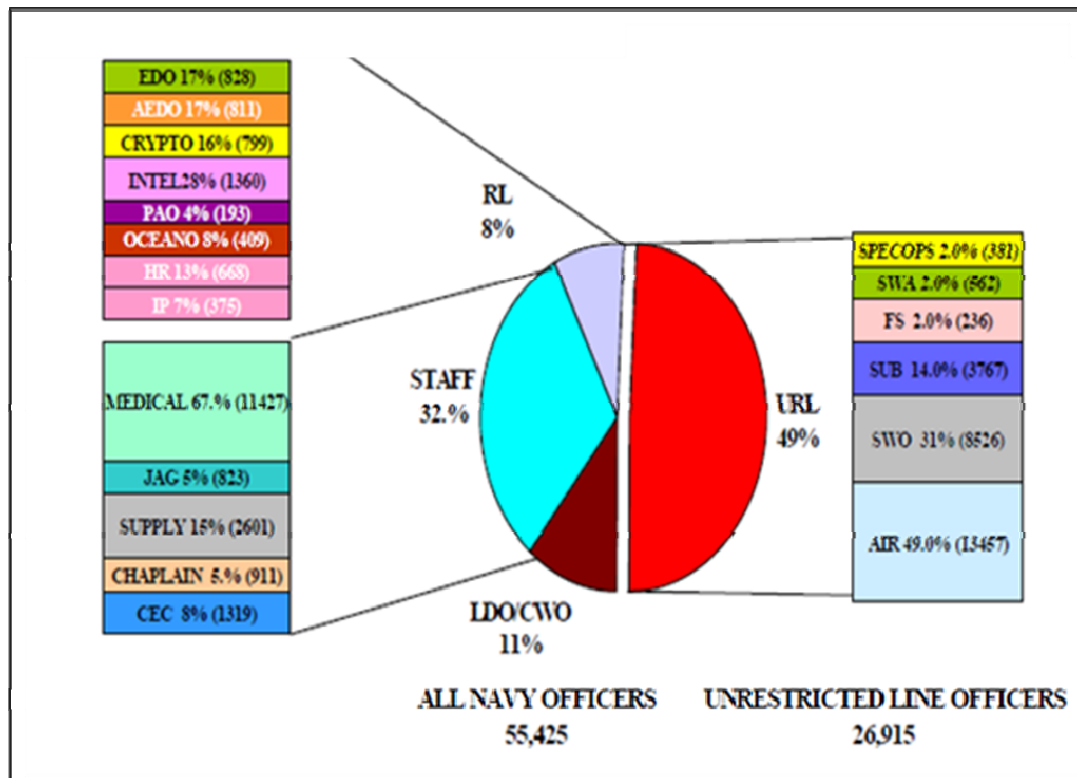


Figure 7. 2003 Officer Corps Makeup (From Mooney & Cook, 2004)

IW end strength (labeled End Strgth), or the number of IWOs reported by the community each FY, is available in Table 9. This table shows end strength broken down by pay grade. Also included are the OPA and the gains and losses for each FY. OPAs are listed to the left, followed by end strength numbers if available to the right (i.e., 105/62). This table only includes OPAs and end strength for designators 1610 and 1640, not LDOs. End strength data from FY92-FY03 came from N131 and can be viewed in Appendix A (Mooney & Cook, 2004). FY08 end strength, OPAs, losses, and gains are as reported by the IW community in October 2008 and March 2009. Since there was no total end strength data from FY04-FY08 (shown in blue) available, these data are reported by subtracting designator 1610/1640 losses and adding 1610/1640 gains from the previous FY end strength. As shown, much of the data available only gives end strength or OPA for a certain FY, but not both.

	ENS O-1	LTJG O-2	LT O-3	LCDR O-4	CDR O-5	CAPT O-6	End Strgth	Total OPA	Losses	Gains
FY92	68/	112/	230/	174/	97/	39/	720	N/A	N/A	N/A
FY93	63/	102/	230/	177/	99/	43/	714	N/A	N/A	N/A
FY94	74/	74/	254/	160/	98/	45/	705	N/A	N/A	N/A
FY95	73/	73/	250/	175/	99/	40/	710	N/A	N/A	N/A
FY96	54/	91/	241/	180/	99/	40/	705	N/A	N/A	N/A
FY97	73/	103/	254/	174/	93/	39/	736	N/A	62	N/A
FY98	71/	96/	259/	178/	92/	41/	737	N/A	60	N/A
FY99	84/	85/	260/	172/	93/	34/	728	N/A	67	N/A
FY00	93/84	87/85	252/260	169/172	95/93	38/34	734	730	66	N/A
FY01	96/48	105/62	214/309	185/176	106/101	38/44	744	743	63	N/A
FY02	105/46	108/74	232/316	183/202	110/109	39/46	777	796	64	N/A
FY03	92/43	125/94	240/322	190/212	111/110	38/46	793	830	63	79
FY04	/51	/88	/325	/217	/109	/47	809	841	63	82
FY05	/71	/110	/393	/238	/118	/49	828	859	59	53
FY06	/110	/108	/358	/242	/123	/49	822	866	62	76
FY07	/115	/113	/360	/258	/129	/49	828	901	63	69
FY08	106/113	140/113	309/365	224/261	103/135	43/49	854	911	61	87
FY09	/113	/116	/362	/261	/135	/49	N/A	912	N/A	N/A
FY10	/113	/117	/362	/262	/135	/49	N/A	914	N/A	N/A
N/A = Not Available										

Table 9. FY92-FY10 IW Community (1610 and 1640 Only) Reported End Strength/OPAs

Using this method gives us a total end strength number of 854 for FY08, 27 personnel more than the IW end strength reported in October 2008. Using manning numbers from two separate sources is the most likely reason for this error. Regardless, this table gives a good overview of what historical and normal end strength, OPA, losses, and gains look like in the IW community.

Table 9 shows that the IW community has not met OPA since FY01. Between FY02 and FY05, this shortage was limited to an average of 30 personnel, or 3%–4% of the total. However, in recent years (FYs06–08), this shortage of personnel has increased to an average of 58 personnel, or 6%–7%

of the total. This increase in the overall shortage of personnel in designator 1610/1640 may be of concern to the IW community.

Within the IW community, females make up 15% of the total IWO population. The IW community currently makes up about 1.8% of the total population of female Naval officers and 1.7% of the total population of males. This is similar to the 2004 population of males and females Navy-wide shown in Table 8. This means the IW community's gender makeup is very representative of the entire Navy.

As shown on Table 9, the IW community has lost an average of 62 personnel every FY (6440 designator excluded) over the last decade. Table 10 shows the behavior of these losses for the last five FYs, as reported by the IW community. Unfortunately, the data gathered do not include all losses, and must be considered a convenience sample of the IW community. The losses reported however, still represent over half of IW losses for each FY.

	Retirement				Resignation			Conduct, FOS, Medical			Total
	<O-3	O-4	O-5	O-6<	<O-3	O-4	O-5<	<O-3	O-4	O-5<	
FY03*	3	9	5	6	3	1	0	1,1,1	0	0	30
FY04	3	10	9	3	1	1	0	1,0,0	0	0	28
FY05	2	11	11	7	1	2	0	1,2,0	1,0,1	0	39
FY06	5	12	7	6	0	1	0	0,1,1	0	0	33
FY07	6	12	8	3	6	1	0	0,2,0	0	0	38
FY08	4	15	6	6	8	2	0	2,1,1	1,0,0	0	45
Total	23	69	46	31	19	8	0	5,7,3	2,0,1	0	214
	Total Retirement: 169				Total Resigned: 27						

Table 10. Loss Behavior of IWOs FY03–FY08

As you can see in Table 10, this sample shows that most personnel seem to leave the IW community due to retirement. While the retirement numbers are steadily increasing, the population of IWOs shown in Table 9 has also steadily increased. Of note is the current resignation trend of more officers in pay grades

O-3 and below in FY07-08. This should be verified by a complete sample of IW loss behavior, and addressed if this trend continues.

As previously stated, the IW community has been steadily increasing its total end strength over the last decade. Table 11 shows the type of personnel that have been gained over the last six years. These data were also reported by the IW community for designators 1610 (the first six columns) and 6440 (labeled LDO).

	USNA	ROTC	OCS	STA-21	Attrites	Laterals	LDO	Total
FY03	4	4	43	0	15	13	0	79
FY04	4	4	35	0	11	28	7	89
FY05	4	4	16	2	5	22	22	75
FY06	5	4	25	7	19	16	17	93
FY07	1	3	25	4	26	10	10	79
FY08	5	1	27	11	23	20	11	98
Total	23	20	171	24	99	109	67	513
Percent	5%	4%	33%	5%	19%	21%	13%	100%

Table 11. IW Gains from Fys03-08 for Designators 1610 and 6440

As shown in the bottom row of Table 11, 33% of FY gains over the last six years have been from OCS, 21% from lateral transfers, 19% from attrites, 13% from LDO, and 5% or less each from the USNA, ROTC, or Seaman to Admiral Twenty-First Century (STA-21). This makes sense, since other sources of accession like the USNA, ROTC, and STA-21 normally produce officers at the rank of ENS/O-1, while the IW community billets (see Table 14) are predominately for LT/O-3s and above.

Historically, many IW accessions were brought on board from the lateral transfer and redesignation process. In data from 1986-2002, approximately 45% of IWOs were accessed through lateral transfers (Monroe & Cymrot, 2004). Of those 45%, approximately half were non-warfare qualified. Not being warfare qualified has been negatively correlated with retention (Monroe & Cymrot, 2004). Today, lateral transfers are less of a factor, but still likely to make up 20%-25% of the IW community.

Sixty-seven percent of current IW community accessions are from traditionally non-warfare qualified sources such as the USNA, ROTC, OCS, STA-21, and Attrites. Approximately 30% of OCS graduates are prior enlisted and may have enlisted warfare qualifications (Watson, 2001). Conservatively, this still leaves at least half of IW accessions non-warfare qualified.

Table 12 shows how many personnel the IW community selected through the lateral transfer process, between FY96 and FY08 (Mooney & Cook, 2004).

	Quotas	Selectees	IW Reported Lateral Accessions March 2009
FY97	N/A	17	N/A
FY98	N/A	15	N/A
FY99	N/A	9	N/A
FY00	23	11	N/A
FY01	29	15	N/A
FY02	29	22	N/A
FY03*	90	*49	*13
FY04	38	22	28
FY05	N/A	18	22
FY06	N/A	11	16
FY07	N/A	12	10
FY08	N/A	20	20
FY09	N/A	19	N/A
*Note that FY03 had three redesignation boards versus the usual two. N/A = Not Available			

Table 12. IW Lateral Transfer Selectees from FY97 to FY08

As noted, FY03 had three redesignation boards versus the usual two. This could be a reason for the huge disparity between reported lateral gains and selectees for that FY. Quotas are listed if available, from Mooney and Cook (2004). FY09 numbers only include the first selection board of that FY. As previously discussed, advancements may also play a role in retention. In addition to negative retention effects, a lack of advancement planning can lead to manning gaps. Table 13 gives the number of personnel advanced to O-4 and

O-5 from FY03 to FY09 (in zone) according to annual Naval administrative messages (NAVADMINs). The advancements of personnel below zone and above zone never exceed 3% and 16% (respectively) of those eligible during this time, and were excluded from this table.

	Advanced to LCDR/O-4	% of Those Eligible	Advanced to CDR/O-5	% of Those Eligible
FY03				
161X	27	75%	14	58%
164X	4	100%	N/A	N/A
644X	1	50%	1	100%
FY04				
161X	38	75%	16	64%
164X	0	N/A	N/A	N/A
644X	5	83%	0	0% (1 eligible)
FY05				
161X	28	82%	8	57%
164X	0	N/A	N/A	N/A
644X	7	63%	0	0% (1 eligible)
FY06				
161X	35	81%	15	71%
164X	3	100%	N/A	N/A
644X	11	68%	0	0% (1 eligible)
FY07				
161X	43	80%	16	62%
164X	1	100%	N/A	N/A
644X	7	88%	1	100%
FY08				
161X	40	80%	22	67%
164X	0	N/A	N/A	N/A
644X	5	83%	0	N/A
FY09				
161X	37	74%	23	70%
164X	0	0% (1 eligible)	N/A	N/A
644X	0	N/A	0	N/A
N/A = Not Applicable (no personnel were eligible for that designator, during that FY, for that rank)				

Table 13. IWs Selected for Advancement in Zone for FY03–08

Advancements from O-1 through O-3 are processed automatically, without selection boards. Table 13 shows that approximately 80% of those O-3s in zone for LCDR/O-4 are advanced, while 64% of those O-4s in zone for CDR/O-5 are advanced. Since advancements can vary between 70%–90% and 60%–80% for O-4 and O-5, respectively, these are considered normal advancement rates for these pay grades.

The amount of time spent on sea duty (and deployed), as well as the locations that IWOs can serve, may also affect retention. IW billet information as of October 2008 is available in Table 14. The IW community holds 1,077 billets, with 257 of those (or 24%) counted as deployable sea duty. Seventy-seven (or 7%) are counted as overseas shore duty. The remaining 69% of billets are counted as shore duty. As shown, billets in the D.C. area make up 35% of total billets, with Norfolk at 17%. The islands of Hawaii are at 9%, San Diego at 8%, and Fort Gordon, Georgia at 6%. The remaining 25% of billets are in various locations, all over the world. This means that 75% of billets are located in five areas, while only 20%-25% of billets are available on the West Coast. Possible location-related retention factors are discussed further in Chapter VI.

Duty Type	O-1	O-2	O-3	O-4	O-5	O-6 & Above	Total	Percent
Shore	62	58	264	191	115	53	743	69%
Sea	40	54	108	41	14	0	257	24%
Overseas	2	8	32	20	13	2	77	7%
Total	104	120	404	252	142	55	1,077	100%
Percent	10%	11%	38%	23%	13%	5%	100%	
Major Locations								
D.C. area							378	35%
Fort Gordon (GA)							64	6%
Hawaii							100	9%
Norfolk Area							182	17%
San Diego Area							89	8%
Other							264	25%
Total							1,077	100%

Table 14. October 2008 IW Billets

Figure 8 shows the IW LOS by pay grade graph (1610 designator only). The yellow background represents the OPA for various pay grades, while the vertical dotted black line splits the pay grades (labeled at the bottom). In Figure 3, the SWO LOS graph showed large manning gaps between YOS 8-16. This is not the case for the IW community. There are, however, manning gaps between years 4–7 and 11–14. The gaps between IW OPA and end strength in Figure 8 correspond with the spikes in Navy officer separation shown again in Figure 9.

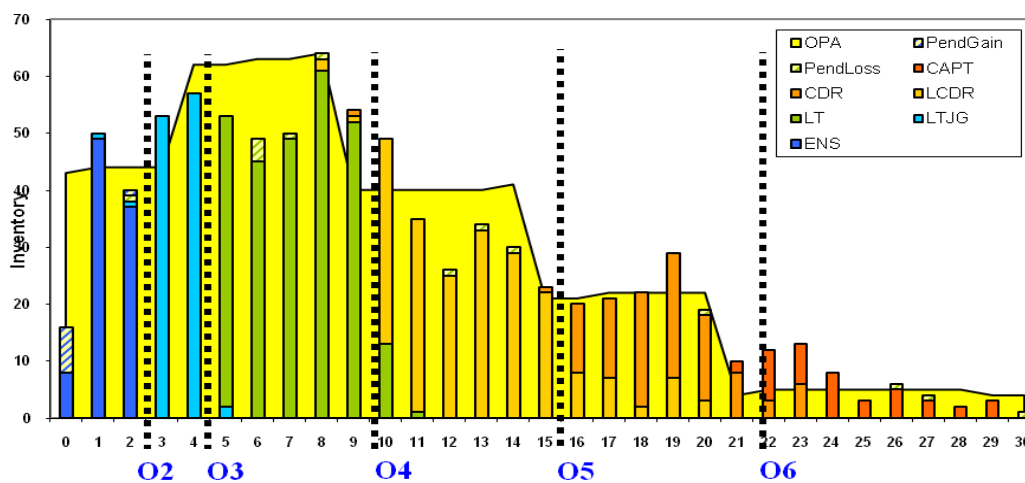


Figure 8. 2008 IW LOS by Pay Grade (From BUPERS 315, 2008)

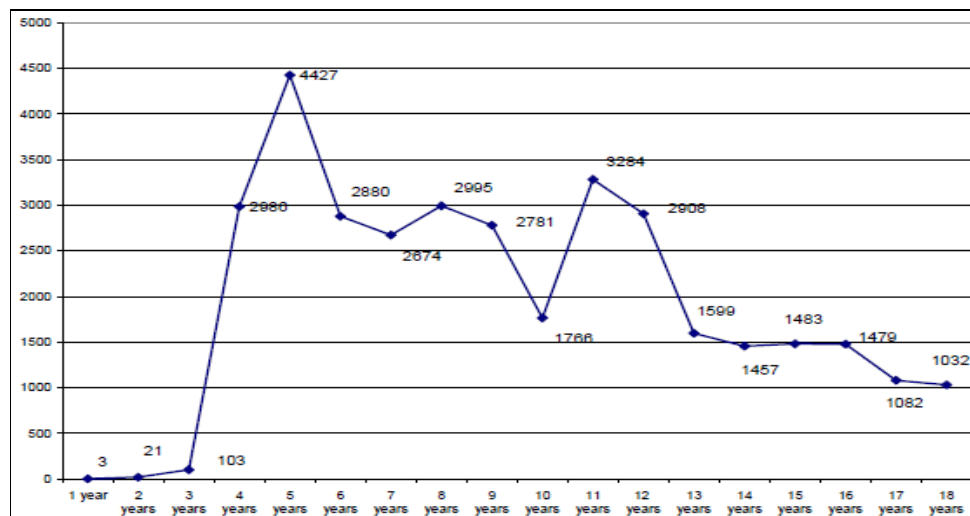


Figure 9. Officer Separation by YOS (URL and RL, 1983-1990) (From Korkmaz, 2005)

As previously discussed in this chapter, Section D, subsection 5, normal officer separation happens initially between years 4 and 6, when an officer's initial obligation is complete. The second spike in officer separation is between years 10 and 12, when officers have a combination of the end of their department head tour obligated service and normal FOS. As reported in October 2008, the IW community is comprised of 44% prior enlisted officers. Because of their prior enlisted service, this should pull normal IW separation gaps to the right of normal. Figure 8 shows IW manning gaps slightly to the right of overall Navy manning gaps in Figure 9. Keep in mind that the scales of the two figures are not proportional to each other. However, the LOS in Figure 8 does not include the LOS for designator 6440. If LDOs were included, the gaps in the IW LOS graph would likely shift even more to the right.

In August 2008, the IW community sent out a general survey to IW officers. Four hundred thirty-two officers (44% of the community) presented valid responses. Seventy percent of those who responded had 1610 or 6440 designators and 82% were in pay grades O-3 to O-5. Of those that responded, 33% came from another officer community (i.e., through lateral transfer or attrition). Of those that reported, 60% were prior enlisted and 40% of those (25% overall) came from cryptology or electronic warfare enlisted ratings. Fifty-eight percent of the respondents felt the IW community should have a warfare pin versus 42% who did not. As reported by the IW community, 25% of the survey respondents had been deployed as an individual augmentee (IA) and 75% had been given the opportunity to establish a mentor/mentee relationship.

When asked what future opportunity(ies) would give them the most reason to continue Naval service, 44% said command opportunities, followed by 36% for joint assignments, 30% for computer network operations, and 27% for operational leadership. As reported by the IW community, this is shown in Figure 10, with the bars on the right in dark blue. On the left, in light blue, are what experiences the respondents thought that the IW community values the

most. There are clear disagreements between the perceived IW community values and what the IW respondents desire, especially when it comes to sea duty and the opportunity to command.

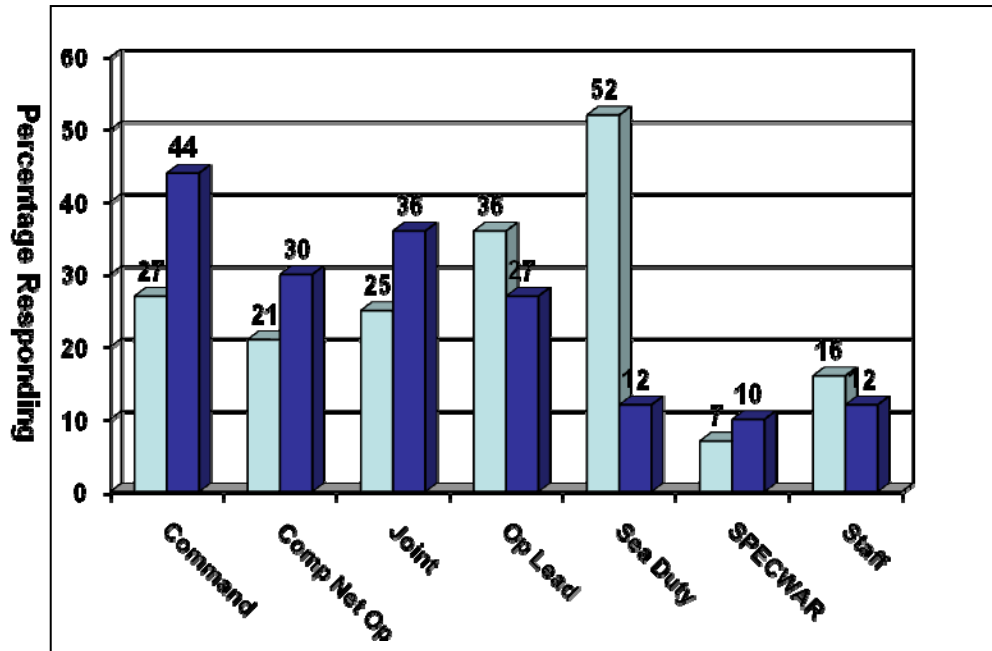


Figure 10. Perceived IW Community Values vs. Future Opportunities Desired (From BUPERS 315, 2008)

Overall, more than 90% of respondents said they would encourage a shipmate/CT to transfer or become a member of the IW community. Interestingly, 28% of respondents were not aware of the IW community's overall vision/strategy, nor of their responsibilities as an IWO. However, overall satisfaction with the IW wardroom is reported at 66%. One of the most intriguing questions in this survey asks how many of the respondents are considering leaving the community via resignation, retirement, or redesignation in the next two years. Forty-two percent of respondents, 181 total, or about 18% of the IW community, responded that they were. Considering that, on average, 62 personnel leave the 1610 designator per year, 181 personnel over two years could have a devastating effect. On the other hand, this is only those personnel

who are considering leaving. If approximately one-third of these personnel defer their retirement, etc., then the numbers would be as expected.

Independent of these survey numbers, the IW community reports that 99 personnel are eligible to retire at O-4 in FY09 (38% of O-4s and 10% of total IWOs) This is also a large percentage, as compared to 17 O-5s eligible to retire in FY09 (2% of total IWOs).

The last survey question asked involved the contributing reasons why IW officers would leave. Of the options available, 33% said family, 30% job satisfaction, 26% career opportunities, 16% personal reasons, 14% promotion opportunities, 11% deployment or IA or Global War on Terrorism Support Assignment (GSA), 7% educational opportunities, and 11% other. With the exception of career opportunities, these reasons are very consistent with prior studies. However, the options that personnel selected from were limited.

III. APPROACH

A. OVERVIEW

A thorough assessment is needed before the IW community implements a CSRB. As mentioned in the Chapter I introduction and shown again in Figure 11, this thesis will follow the acquisitions-based JCIDS CBA process. Part of this approach is the FAA and FNA shown in Figure 11. Again, this process has been changed with the new version of DOD Instruction 5000.02.

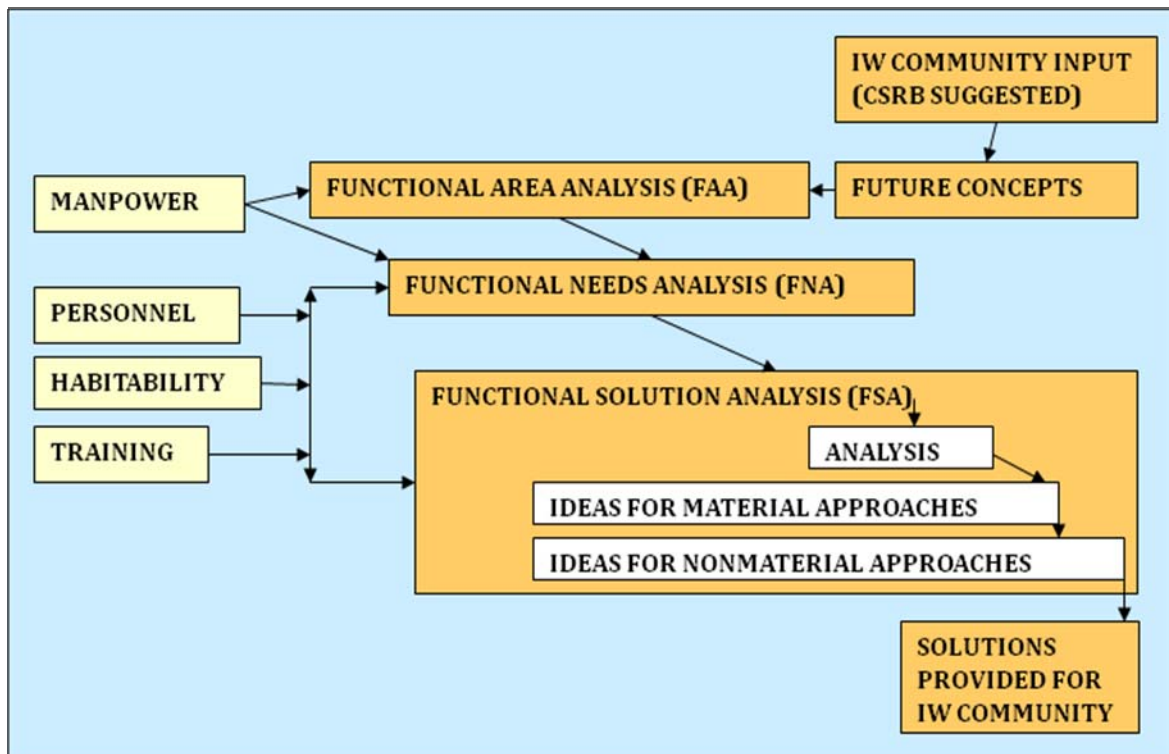


Figure 11. The CBA Process (From Joint Chiefs of Staff, J-8, 2006)

In this chapter, Section B concludes the FAA, and Sections C and D provide the FNA approach. Section C provides the approach to find retention gaps within the IW community, while Section D provides the approach to finding a CSRB recommendation.

B. FUNCTIONAL AREA ANALYSIS (FAA)

Much of the FAA is completed in the Chapter II Literature Review. This section summarizes the most important points of the FAA on CSRB, retention, and the IW community 1610, 1640, and 6440/LDO designators.

1. Summary of Area Analysis

a. CSRB

- The Navy supports paying CSRBs when it is cost-effective.
- The CSRB may not be the most effective or efficient tool (since it does not take into account nonmonetary factors).

b. Retention

- More flexibility in retention choices will retain more personnel.
- In random order, the major nonmilitary retention factors are: pay, age, tenure, number of dependents, organizational commitment, satisfaction with work, coworkers, and supervisors/leadership.
- In random order, the major military and IW retention factors are: pay, bonuses, work hours, being prior enlisted, frequency of deployments, education/training, frequent relocations, spouse employment, leadership, culture, mentoring, lateral transfers, sabbaticals, time with family, and career opportunities.
- Warfare-qualified personnel are promoted more and retained longer than non-warfare qualified personnel.
- Prior enlisted officer retention to the rank of O-4 should be high.
- There are many reasons for prior enlisted officers to separate at 18-21 YOS.

c. The IW Community (1610/6440) (2008)

- Made up of 925 personnel, 44% prior enlisted, many from enlisted cryptology ratings.

- Sixty-nine percent of IW billets are considered shore duty and, of those, about 52% are in the D.C. and Norfolk, Virginia areas.
- Has not met OPA since 2001.
- Top three accession groups since FY02 are made up of 33% OCS, 21% Lateral Transfers, and 19% Attrites. For the RL communities, these groups usually have higher retention.
- IW advancements and ratio of men to women are a reflection of Navy norms.
- Approximately 75% of losses each FY are due to retirement and 25% due to resignation, conduct, FOS, and medical.
- LOS/OPA for 1610 designator shows normal gaps at O-3 from 5 to 7 YOS, and O-4 from 11 to 14 YOS, when taking into consideration the number of prior enlisted officers.
- There is a gap between what IWOs want in order to remain in service and what they perceive is important to the IW community, specifically with respect to sea duty (not desired by personnel) and the opportunity to command (highly desired by personnel).

2. Possible IW Capability Gaps

The IW community holds 1,077 1610/6440 billets, all of which have a specific job and a related number of work hours attached to them. Since the IW community has only 927 officers to fill those billets, this means that other military personnel or government employees must work harder to do the job of these unmanned billets.

This may result in decreased operational support or decreased operational readiness. Unfortunately, this definable capability gap is abundant throughout Navy manning. At some point, a very real and recognizable loss in manpower must be important enough to be addressed. Where is this point? At a constant rate of +20 accessions per FY, when holding gains, losses, and OPA constant, the IW community will not meet OPA for another 4-5 years. Assuming that the

IW community continues to add 20 personnel to its end strength per year, there are two main scenarios that could occur. Scenario 1 is a worst-case scenario, while Scenario 2 is more plausible. These scenarios will help identify how many personnel in pay grades O-4 and O-5, the community should try to retain.

3. Scenario One

The IW community has 116 personnel eligible to retire in FY09, 99 from the O-4 pay grade. According to the IW survey, this trend may continue at least into FY10. In Scenario One (a worst-case scenario), due to a variety of reasons, all of these personnel retire. Looking at historical advancement data in Table 13, there are only a maximum of approximately 45 O-3s eligible for promotion each year. Even if the maximum 90% of them advance, it would only amount to, at most, 50-55 new O-4s. In this scenario, it is doubtful that many O-3 officers would FOS. Since most are likely to be promoted, this may increase the desire to stay—especially in the current economy. However, with such a high number of retirements, there would probably be a small loss of organizational knowledge and slightly higher workload or job demand. With this in mind, assume that the number of O-3 resignations is likely to remain the same or decline slightly. This would leave approximately 50–60 new O-4s.

In this scenario, the IW community gap at the grade of O-4 would increase. At this point, manning at O-4 would dip below 200 total and sit between 65% and 75%. This scenario gives some room for O-4 laterals and other fluctuating numbers. Manning at the O-5 level would not recover from its current 72%–79%, since the O-4 pool would have significantly shrunk and O-5 historical advancement numbers would remain the same or be slightly higher by zero to five personnel than the number retiring (17). Even if advancements increase to their maximum percentage, the number advanced will only increase by, at most, 3 or 4. Recovering from manning shortages at O-5 is not a one-year fix. It takes several years of high advancement and normal, or reduced, turnover.

The results of this scenario are manning problems at both O-4 and O-5. This scenario would be worse if similar numbers of personnel retire in FY10.

4. Scenario Two

In Scenario Two (a more realistic scenario), not all of the 116 personnel eligible to retire do so. In this scenario, the numbers stay much the same as previous years, increasing slightly due to the increase in past end strength. Under this scenario, approximately 60 of the 99 O-4s would retire (60% of those eligible). Assuming the number of resignations remains the same as in previous years, and O-3 resignations reduce slightly, there would be just enough O-3s to promote to O-4. In this scenario, the O-5 community may promote enough eligible O-4s to slightly increase the O-5 manning levels, but not enough to solve O-5 manning problems altogether.

The result of Scenario Two shows that O-4 manning is likely to stay the same. In Scenario Two, O-5 manning may improve slightly, but like Scenario One, it will likely take longer than one year to increase O-5 manning levels significantly.

5. FAA Conclusions

The IW community is facing a retention issue both at midgrade (O-4) and control-grade (O-5). While current O-5 manning is low, O-4 manning looks healthy. However, when taking into account the number of prior enlisted officers within the community and current trends, the community is one bad year of turnover (high number of retirements or resignations) away from also facing manning issues at O-4. It is safe to say that, for the next few years, the IW community should try to retain at least 50% of those eligible to retire or resign in pay grades O-4 and O-5.

While monitoring the number of prior enlisted officers may be wise in the future, it will not fix the current problem. The FNA shows both who is leaving the IW community, and how much of a CSRB they might need to remain in service.

C. IDENTIFYING RETENTION NEEDS

To show who is leaving the IW community, data gathered from DMDC representing FYs97-07 were compared to an October 2008 list of IW officers. These data sets were matched to provide the last 10 years of retention information on over 1,100 IW officers. This retention information is used as a dependent variable to identify possible retention issues and areas of low retention within the IW community. The results of this FNA are in Chapter IV.

1. Data Description

The data used in this FNA comes from a longitudinal data file of Navy active duty service members maintained by the DMDC. The original data file contained over 800,000 personnel who served on active duty, in any of the years from FYs9707. The information analyzed from this data file is unclassified and does not contain individual social security numbers (SSNs). To create a file of IWOs, the original DMDC data file was filtered to include only officers who served in designators 161X, 164X, or 644X. There were 1,272 IWOs identified who had served in this capacity.

To find out which of these officers remained in service, the DMDC data set was compared with a more current data set provided by the IW community. This second data set included 990 IWOs who were currently serving in designators 161X, 164X, or 644X as of October 2008. This data file is also unclassified and does not contain individual social security numbers. To match the DMDC data to the current IW community data for retention determination, each person in both data files was assigned a specific code. This code consisted of their pay entry base date (PEBD) year and month, and their date of birth (DOB) year and month. For example, someone born in January 1975, who entered service in May 1997, would contain a specific code of 199705.197501. Due to data constraints, this code was limited to year and month only. Given the lack of SSNs to match the data sets, this was the best method of determining retention.

The limitation of this method is the duplicate matching of those personnel who have the same DOB year and month, along with the same PEBD year and month. Those personnel with duplicate PEBDs and DOBs were excluded from the data analysis. This left the DMDC data set with 1,145 officers, and the current IW data set with 897 officers. Although the duplicate data were excluded in an unbiased manner, this excluded data set over-represented Caucasians with a bachelor's degree from the Naval Academy. The reason for this bias is unknown; however, it is possible that there are lots of common PEBD's among Naval Academy graduates in our data set. All other excluded data is representative of the data used for this study.

Figure 12 shows the process of identifying IW officers who left service and those who remained in. After the exclusion of PEBD/DOB duplicates, 542 personnel of the original DMDC data set remained in service. Six hundred and three personnel from the original DMDC data are no longer a part of the IW community as of October 2008. When looking at NAVADMINs, only eight personnel have left the IW community via redesignation since 2004. It is, therefore, a good deduction that almost all of the 603 personnel that left the IW community are separated or retired from active Naval service.

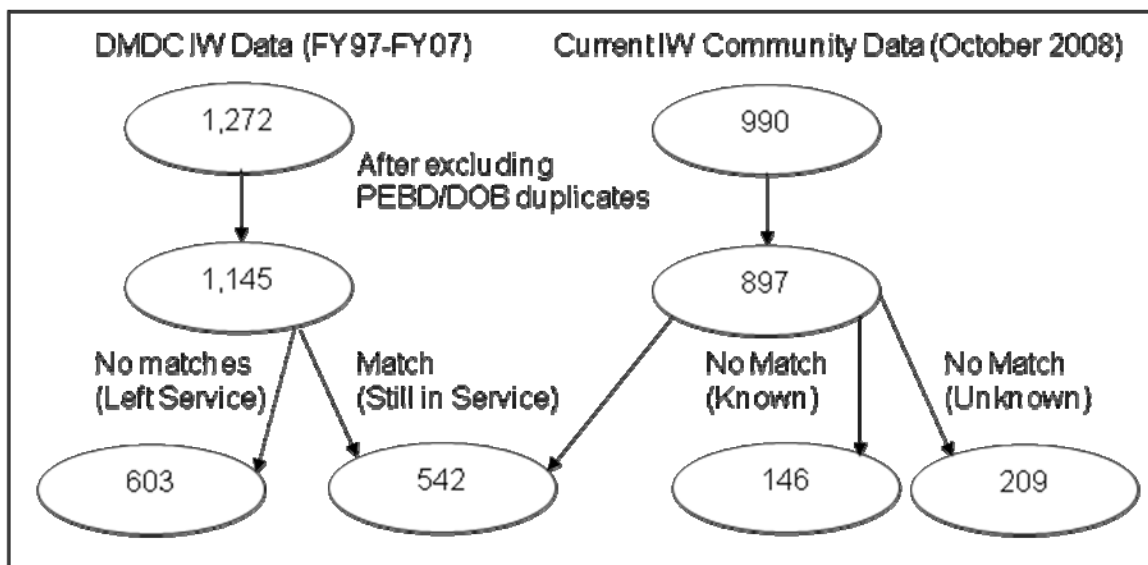


Figure 12. Description of Data Matching

Of the October 2008 IW community data, 355 personnel do not match the older DMDC data set that ended in September 2007. Of those 355, 146 are accounted for due to the following reasons:

- Incomplete data (7)
- PEBD after October 1, 2007 (15)
- Active Duty Commissioning Date (ADCD) after October 1, 2007 (40)
- Reservists (nonactive component) (29)
- IW officers in training or officers so new, they are unlikely to be included in the DMDC data set (55)

This leaves 209 personnel currently in the IW community who are in the active component, and are not “newer” personnel, as described above. The reason these personnel are not in the original DMDC data set is unknown. It is possible that this large data set from DMDC includes errors. This excluded data also over-represents personnel of Hispanic ethnicity. Other than this over-representation of Hispanics, the excluded data are otherwise representative of the data used in this thesis.

2. Procedure

Once the data set was created, there were 1,145 lines of data (603 + 542) with 64 columns of information. Of the 64 columns of information, most were decoded using Microsoft Excel software and the DMDC Active Duty Personnel Cohort File Record Format (Version 2). After decoding, many columns were excluded due to blank or useless information. For example, there were six columns of data for a Desert Storm study, and other nonapplicable data columns for enlisted personnel information. After this initial sorting, information that was not available for both those that left the service and those that are still in service was excluded.

For example, three different columns included information on race or ethnicity. Two of these columns gave race and ethnicity data in a format that

was added to the database in April 2006. These two columns did not contain accurate information on those personnel who left the Navy before April 2006. If personnel left the Navy before then, their data for these columns simply stated as unknown. The third column gave race and ethnicity under an older format, but included data for almost all 1,145 lines of data.

After careful scrutiny, the following columns or predictor variables were identified as containing possibly useful information:

- Pay Grade
- Gender
- Family Status
- Education
- Source of Commission
- Race or Ethnicity
- Job by Naval Officer Billet Classification (NOBC) Codes
- Personnel Operational Tempo
- *Prior enlisted

*This prior enlisted predictor variable was created.

Columns containing Active Duty Service Dates (ADSD) and ADCDs were compared to each other to find out whether or not officers were prior enlisted. PEBDs and ADSDs often fluctuate depending upon source of entry into the military or commissioning source. Because of this fluctuation, a prior enlisted officer was identified as someone who had completed more than 48 months of AD service according to their ADSD, before receiving a commission according to their ADCD. This is similar to the Defense Finance and Accounting Services (DFAS) definition of a prior enlisted non-warrant officer for pay purposes.

These data were then grouped and downloaded to JMP 8 software for statistical analysis. Whether or not a person stayed in or left the IW community is used as the dependent variable. The columns of data described above are used as predictor variables to try to identify areas of concern for IW retention. Since

these data columns provide categorical data, chi-square tests were used for initial and interaction analysis. Then, a logistic regression model was built, using stepwise regression, in an attempt to model IW retention.

Additionally, the analysis also looks at months of service in an IW designator. The initial months of service data included the first and last month of service in the IW community for the original 1,272 IWOs, broken down by designator. Confounding these data was the fact that many officers hold an IW training designator (1640 or 1645) initially, and then switch to a regular IW designator like 1610. It was noted that many of these months of IW service ended in the 46th month, while many others began in the 46th month. It was assumed that this represented the training transition from an IW in training to a qualified IWO. To look at months of service in a retention format, the training data were excluded. Additionally, those personnel that got out at 119 and 120 months were often confounded with those who did not get out. For this reason, the last two months of service data were also excluded. These data provided a longitudinal look at when personnel in the IW community leave the community, departing before 118 months (9 years and 10 months) of IW service.

3. Confounding Variables

It is important to note that these data provide the most current information available. For example, the rank, family status, or NOBC job held by an individual in the data set is the most current available. It does not represent past history. If someone left the IW community in October 2001, then these data will represent his or her last known information. If, however, someone is still in the IW community, then these data will represent his or her last known data as of September 2007, when the original DMDC data file was created.

It is also because of this that making assumptions while looking at NOBCs and Personnel Operational Tempo can introduce confounding variables. Retention may (or may not) be related to a person's job or job tempo during a certain time. Ideally, NOBCs and Personnel Operational Tempo could be viewed

multiple times over the course of one's career. Finding these data, however, requires the use of other data columns that may have high variability, such as months of service or months of service in one of the IW designators. Because of these possible confounding variables, personnel operational tempo is not included in the results, and job by NOBC is discussed only sparingly.

However, the personnel operational tempo descriptive statistics can be found in Appendix B. The descriptive statistics show that operational personnel who are deployed or separated from their family, are more likely to stay in the IW community than those who are nonoperational. This is highly sensitive, however, to a number of confounding variables such as time in service, personnel tempo over an entire career, and where personnel are stationed at the time of retirement or end of obligation.

Initially, months of service was to be used as a predictor variable; however, after careful scrutiny, it was decided that this variable was very unreliable. Additionally, several unusual DMDC data entries had the ability to cause confounding results. These abnormalities are described in Chapter IV as applicable.

4. Predictor Variables

Of the nine predictor variables available, eight were used. Each of the variables are described below according to the available data.

Pay Grade is identified, in order from low to high, as O-1 or Ensign (ENS), O-2 or Lieutenant Junior Grade (LTJG), O-3 or LT, O-4 or LCDR, O-5 or CDR, and O-6 or Captain (CAPT). There are one or two Rear Admirals in the data set(s); however, these were not included in the analysis.

Gender is defined as male or female. Family Status includes four subcategories: Joint Marriage, Married, Single, and Single with Family. Joint marriage is defined as a married man and woman, who are both on AD in the military. Married is defined as a married man or woman, only one of whom is on

AD in the military. Single is defined as nonmarried, including divorced or widowed, without dependent family. Single with family is defined as non-married, including divorced or widowed, with dependent family, including children or parents. Dependent family is defined as family (usually children or parents) who are recognized by the military as needing the member's support.

Education was identified as High School (HS) Diploma, Associate's Degree, Baccalaureate Degree, Master's Degree or equivalent, or Doctorate Degree. This means that these personnel have received their diploma or degree in fulfillment of that level of education.

For the analysis purposes, the major sources of commission are grouped into unknown, Naval Academy, ROTC scholarship, ROTC nonscholarship, ROTC combined (both scholarship and nonscholarship), OCS/AOCS/OTS, direct appointment (nonprofessional), and other. "Other" includes those categorized under other in the original data, along with two personnel commissioned by other service academies, and four personnel commissioned by direct appointment (professional). Naval Academy, ROTC Scholarship, and ROTC nonscholarship include those personnel commissioned by those sources. Direct appointments (nonprofessional) are those personnel commissioned directly by the Navy in a nonprofessional capacity, usually for a specific duty or job. These personnel are often given the option to continue or separate from service once their duty or job is complete.

Race and ethnicity are grouped as unknown, Caucasian, African-American, Hispanic, Indian, Asian and Pacific Islander, or Other. Job by NOBC was grouped using the NOBC manual. This list will identify the groups used, followed by their distinct NOBC codes. These groups consist of Naval Science (2100-2199), Personnel (3000-3999), Electronic Engineering (General) (5900-5999), Staff and Fleet Command (9000-9099), Shore Operations (9400-9499), Communications (9500-9599), Intelligence (9600-9699), Automated Data Processing (ADP) (9700-9799), Information Warfare (9800-9899), and Other. "Other" included all other NOBC jobs not included in the above

categories. “Other” made up approximately 13% of the total Job by NOBC data available. Prior enlisted is defined as someone who has completed more than 48 months of AD service prior to receiving a commission as an officer.

D. IDENTIFYING CIVILIAN EQUIVALENT PAY

Finding out the retention needs of the IW community is a large part of this thesis. However, the implementation of an IW CSRB may be a solution to increase retention. This section will discuss the methodology used to find a civilian equivalent pay for IWOs. The difference between this pay and the current pay of IWOs (if any) may be useful in the implementation of an IW CSRB.

1. Procedure

As discussed in Chapter II, Section C, subsection 7, there is an easily accessible Web site that converts MOCs to SOC's or military jobs to civilian equivalent jobs. This Web site translator can be located on the World Wide Web at <http://www.acinet.org/moc/Default.aspx>. To use this Web site, it is helpful (but not necessary) to have a military NOBC code(s). To ensure fairness in this pay equivalent process, the top 15 IW jobs were selected for comparison and are listed in Table 15. The left column shows the NOBC code, followed by the MOC or military job title. The third column is the number of IWs in the data set that worked in that job. The right-hand column shows the percentage of IWs that held that particular NOBC code. The total number of IW personnel with NOBCs in the data set was 1,143.

NOBC	MOC	IW TOTAL	% IW TOTAL
9815	Operations Officer, Naval Security Group	204	17.9%
9851	Direct Support Officer, Naval Security Group (Surface)	181	15.9%
9850	Direct Support Coordinator, Naval Security Group	57	5.0%
9860	Special Operations Officer, Naval Security Group	47	4.1%
9735	Computer Systems Analyst	43	3.8%
9421	Commanding Officer, Shore Activity	39	3.4%
9853	Direct Support Officer, Naval Security Group (Subsurface)	36	3.2%
9817	Operations Watch Officer, Naval Security Group	34	3.0%
9065	Staff Operations and Plans Officer	29	2.5%
9436	Executive Officer, Shore Activity	27	2.4%
9852	Direct Support Officer, Naval Security Group (Air)	27	2.4%
9087	Staff Plans Officer	25	2.2%
9517	Communications Security Officer	22	1.9%
9640	Operational Intelligence Officer (General)	22	1.9%
9825	Information Processing and Reporting Officer, Naval Security Group	22	1.9%
3290	Training Officer	15	1.3%
TOTAL		830	72.6%

Table 15. IW Jobs by NOBC Used to Find Civilian Equivalent Pay

As shown in Table 15, the top 15 jobs represent approximately 73% of the total number of IW jobs. These jobs were matched to their civilian equivalent jobs using the aforementioned Website. Then, using the Bureau of Labor Statistics May 2008 National Occupational Employment and Wage Estimates, the annual wages were found for the IW civilian equivalent jobs. While mean annual wages are shown in Chapter IV, it is assumed (based on Chapters I and II) that a CSRB will be given to personnel who are higher in rank and with more experience than the average IWO. For this reason, the 75th percentiles of wages for each job are used to find an equivalent civilian pay. We then compute a weighted average of these 75th percentile values, with weights determined by each job's proportional representations listed in Table 15. The resulting amount is an estimate of the civilian equivalent pay for an IWO.

This civilian equivalent pay is then compared to the pay that an IWO currently makes. The Secretary of Defense offers a current military compensation calculator that identifies how much annual base pay, Basic Allowance for Sustenance (BAS), and Basic Allowance for Housing (BAH) military personnel receive. This calculator can be viewed on the World Wide

Web at <http://www.defenselink.mil/militarypay/pay/calc/index.html>. While base pay and BAS are the same for each officer in a certain pay grade, BAH is dependent upon location. This study used the national Inside the Continental United States (INCONUS) average for BAH. The annual amount of base pay, BAS, and BAH was then used to compare military pay versus civilian equivalent pay.

2. Concerns and Assumptions

There are at least three possible concerns to this method of computing an IW civilian equivalent pay. First, the NOBC codes from the data set used are from the last ten years of IW community billets. A list of current billets is available, but does not have the needed NOBC codes. For complete accuracy in this process, the use of current NOBC codes is recommended. An initial check of the current IW billet list shows that the billets used for this comparison are still current billets in the IW community, with the exception of one type of billet. The DMDC data set included 22 NOBC billets identified as Classic OWL Special Operations Officer. There were only two similar billets found in the current billet list. Therefore, this NOBC was excluded and the next highest NOBC billet was added to the list in Table 15.

Second, this approach may be more accurate if a CSRB pay grade is identified first. Then analysis could search for the most common NOBCs within that specific pay grade. The argument against this is that many officers perform jobs at junior ranks before becoming senior IWOs. Identifying only jobs at a certain rank may exclude jobs that these officers are very experienced in doing.

Thirdly, military benefits and civilian benefits are often very different. It is often argued that military benefits and retirement offer much more than civilian equivalent jobs. However, the military also has frequent deployments, relocations, and long working hours, as noted in Chapter II. For the purposes of a monetary CSRB, it is assumed that the better military benefits are offset completely by deployments, frequent relocations, working hours, and other

negative retention factors. Because of this assumption, it is assumed that military pay and civilian equivalent pay are equally weighted by IWOs. This assumption may not be realistic.

IV. RESULTS

A. OVERVIEW

In this chapter, the results of the DMDC IW retention study are included as part of the FNA. Additionally, the results of an analysis on IW-equivalent civilian pay for CSRB purposes are included as the final section of this chapter. FNA conclusions and FSA recommendations will be provided in Chapter V.

The data analyzed in Sections B and C represent a historical population of IWOs. We can treat this population as a hypothetical sample of all historical and future IWOs. As a sample, *p*-values are used to assess the significance of these data. Throughout this chapter, *p*-values are considered significant if they are below .05. Additionally, significant *p*-values are denoted with an asterisk. All tables, charts, and analysis use Retention Status as the Y or Dependent variable.

B. IW RETENTION DESCRIPTIVE STATISTICS

This section is organized by type of predictor variables. Each subsection has tables showing descriptive statistics along with categorical differences in IW retention. Descriptive statistic tables show the actual numbers of personnel within each category. The Predictor variable is in the left column, followed by retention status. “In” means these personnel stayed in the IW community, while “Out” means these personnel left the IW community. The total number of personnel under that category is in the total row/column, while percentages of the total retention status are to the right. Education, Race/Ethnicity, and Source of Commission have rows of unknown located in the predictor variable description. Since unknown data provides no contribution to this thesis, these unknown rows of data are excluded from the comparison tests for those predictor variables.

After the descriptive table, some subsections have a chi-square comparison graph (identified by its red and blue color). This chi-square graph is

shown only if the chi-square p -value is less than .05. This graph has categorical labels along the x-axis. The bar width of these categories is relative to its population size.

1. Pay Grade

This subsection provides historical information on the relationship between IW retention and pay grade. Table 16 shows that as expected, ENSs and LTJGs stay in more than officers at higher pay grades. More LTs get out than stay in, and LCDRs get out at the highest rate (63.4%), followed closely by CAPTs (63.0%) and CDRs (62.1%). Table 17 shows these differences.

PREDICTOR VARIABLE RANK	RETENTION STATUS			PERCENTAGES	
	IN	OUT	TOTAL	IN	OUT
ENS	83	22	105	15.3%	3.6%
LTJG	88	59	147	16.2%	9.8%
LT	176	190	366	32.5%	31.5%
LCDR	112	194	306	20.7%	32.2%
CDR	53	87	140	9.8%	14.4%
CAPT	30	51	81	5.5%	8.5%
TOTAL	542	603	1,145	100.0%	100.0%

Table 16. Pay Grade Description

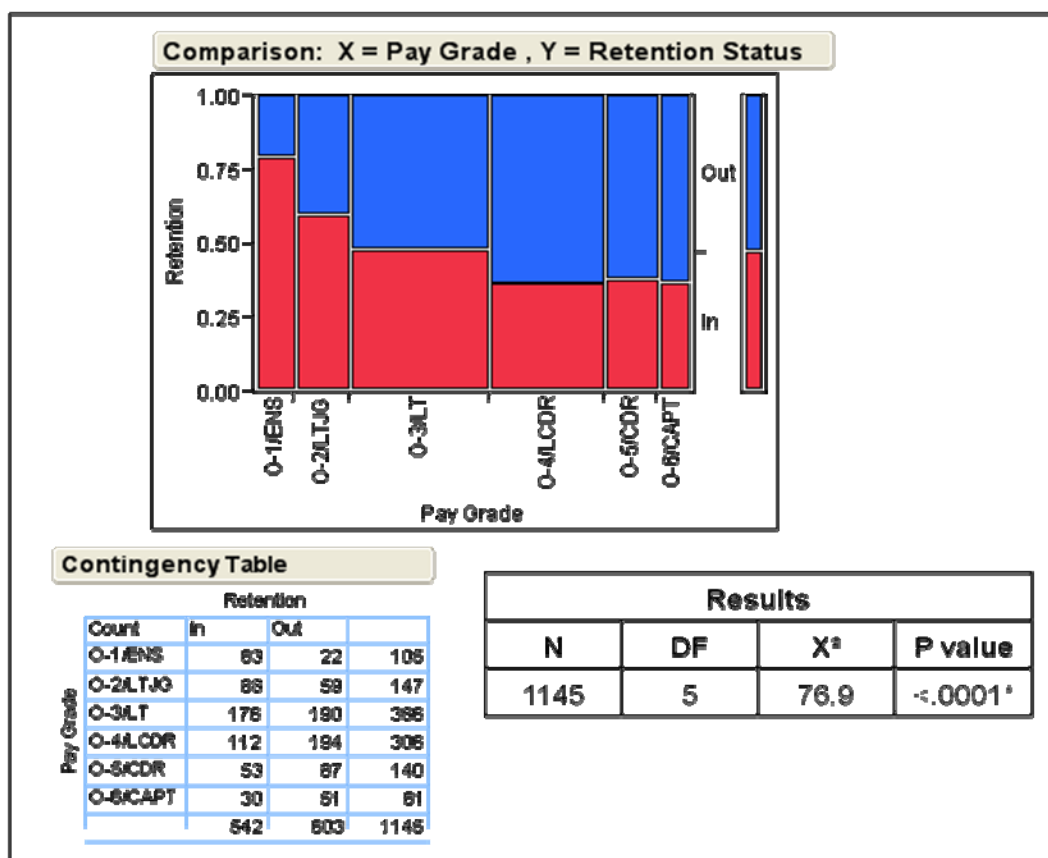


Table 17. Pay Grade Categorical Differences

As shown in Table 17, there are significant differences in retention among pay grades at the .0001 level. While significant differences look to be between the two lowest grades (O-1 and O-2) and the higher ranks, this difference is expected. Most personnel in these lower ranks have not been in service long enough to be eligible to leave the IW community. Table 17 also shows the beginning of an expected decrease in retention as personnel become more senior. Retention, however, reaches its minimum at O-4. While it is true that LCDRs have the lowest retention, retention in pay grades O-5 and O-6 are not much different.

The data show that the overall retention rates for the last decade are 48% for O-3, 36.6% for O-4, 37.9% for O-5, and 37% for O-6. This supports the theory that O-4 and O-5 may be an area of concern for the IW community, dependent upon the desired retention rates for those pay grades.

2. Gender

This subsection provides historical information on the relationship between IW retention and gender. Table 18 shows that IW females are historically more likely than males to leave the IW community; however, this difference is not statistically significant.

PREDICTOR VARIABLE GENDER	RETENTION STATUS			PERCENTAGES	
	IN	OUT	TOTAL	IN	OUT
MALE	469	506	975	86.5%	83.9%
FEMALE	73	97	170	13.5%	16.1%
TOTAL	542	603	1,145	100.0%	100.0%

Table 18. Gender Description

3. Family Status

This subsection provides historical information on the relationship between IW retention and family status. Table 19 shows that over 70% of the IW community is married. This is similar to the proportion of married males in the military shown in Chapter II, Table 8. The table also shows that single personnel with family are historically more likely to leave the IW community than those who are single, married, or in a joint marriage; however, this is not of statistical significance with a p -value of .128.

PREDICTOR VARIABLE FAMILY STATUS	RETENTION STATUS			PERCENTAGES	
	IN	OUT	TOTAL	IN	OUT
JOINT MARRIAGE	21	16	37	3.9%	2.7%
MARRIED	382	441	823	70.5%	73.1%
SGL W/ FAMILY	19	33	52	3.5%	5.5%
SINGLE	120	113	233	22.1%	18.7%
TOTAL	542	603	1,145	100.0%	100.0%

Table 19. Family Status Description

4. Education

This subsection provides historical information on the relationship between IW retention and education. Before discussing education as a predictor variable,

it is important to note a possible confounding variable found during data analysis. In the DMDC data set described in Tables 20 and 21, all 102 of the IWOs with a Doctorate also have OCS/AOCS/OTC, other, or unknown listed as their commissioning source. Additionally, 101 of these 102 officers are in pay grades O-3 or below. This is possible since OCS/AOCS/Officer Training Command (OTC), other, and unknown Source of Commission (SoC) make up 70% of all IW commissioning sources in this data set, as shown in Table 23. However, this still implies that none of the remaining 30% of IW officers from the Naval Academy, ROTC, or Direct Appointment have a Doctorate. This also implies that only one IW officer in pay grades O-4 and above has a Doctorate. The author found this to be highly suspicious. It is very possible that DMDC has made some errors in the area of Doctorate education.

PREDICTOR VARIABLE	RETENTION STATUS			PERCENTAGES	
EDUCATION	IN	OUT	TOTAL	IN	OUT
UNKNOWN	98	54	152	18.1%	9.0%
HS DIPLOMA	64	50	114	11.8%	8.3%
ASSOCIATES	19	21	40	3.5%	3.5%
BACHELORS	203	347	550	37.5%	57.5%
MASTERS	82	105	187	15.1%	17.4%
DOCTORATE	76	26	102	14.0%	4.3%
TOTAL	542	603	1,145	100.0%	100.0%

Table 20. Education Description

As shown in Table 20, having a Doctorate or HS Diploma has a positive association with retention. Conversely, having a Bachelor's or Master's degree has a negative association with retention. It is worth noting that many prior enlisted LDO officers have an education level of HS Diploma or an Associate's degree. This may help explain why the retention at these lower educational levels is higher than those at Bachelor's or Master's level. Table 21 shows these educational differences. Those with an unknown education are excluded from the analysis shown in Table 21.

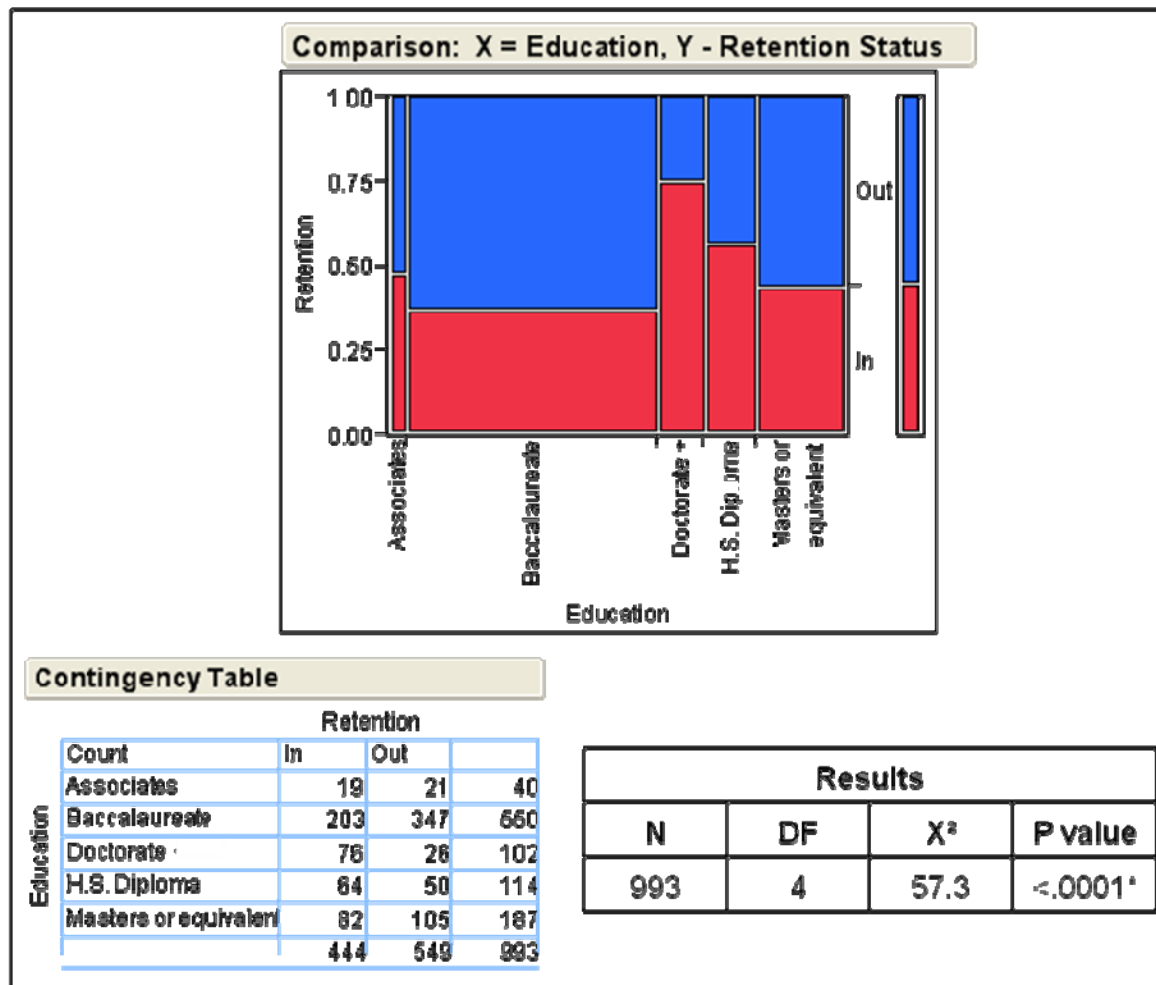


Table 21. Education Categorical Differences

As shown in Table 21, there are significant differences in retention among the educational subcategories and retention status to the .0001 level. A Doctorate or HS Diploma has the most positive effect on retention. Bachelor's degrees, followed by Master's degrees, have the lowest effect on retention. If the LDO-related HS Diplomas and Associates degrees are excluded, the data show a positive relationship between higher education and retention.

5. Source of Commission

This subsection provides historical information on the relationship between IW retention and an IW officer's source of commission. Table 22 shows that personnel commissioned through OCS/AOCS/OTC make up approximately 50%

of the total. Other than those with unknown commissioning sources, it looks as though OCS, AOCS, and OTC also have the most positive effect on retention. Both Tables 22 and 23 show SoC retention patterns similar to what Bernard (2002) found in Chapter II, Table 5. The description also shows that personnel commissioned through direct appointment have lower retention rates. This is most likely due to their often-temporary status.

PREDICTOR VARIABLE SOURCE OF COMMISSION	RETENTION STATUS		TOTAL	PERCENTAGES	
	IN	OUT		IN	OUT
UNKNOWN	51	14	65	9.4%	2.3%
NAVAL ACADEMY	54	70	124	10.0%	11.6%
ROTC SCHOLARSHIP	60	85	145	11.1%	14.1%
ROTC NONSCHOLAR	13	22	35	2.4%	3.6%
OCS/AOCS/OTS	284	279	563	52.4%	46.3%
DIRECT APPT Non-Professional (Non-Prof)	16	50	66	3.0%	8.3%
OTHER	64	83	147	11.8%	13.8%
TOTAL	542	603	1,145	100.0%	100.0%

Table 22. Source of Commission Description

Table 23 shows the categorical differences in retention between sources of commission. The unknown SoC shown in Table 22 are excluded from the analysis shown in Table 23.

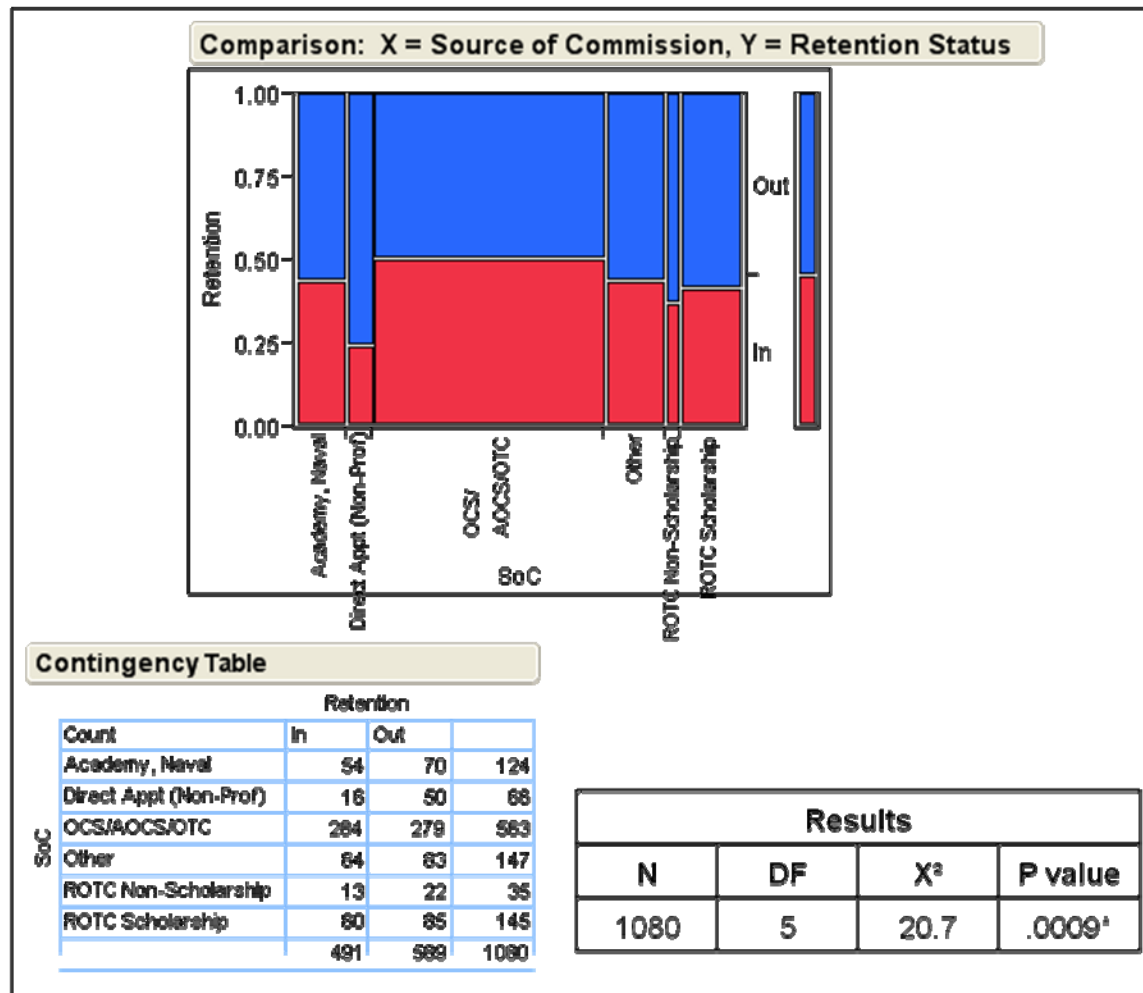


Table 23. SoC Categorical Differences

As shown in Table 23, there is a significant difference in retention among the categorical sources of commission at a .0009 level. This is mostly due to the differences between Direct Appointment (Non-Prof) and the other subcategories. However, there is also a difference between those commissioned through ROTC and those from OCS.

6. Race or Ethnicity

This subsection provides historical information on the relationship between IW retention and race or ethnicity. As shown in Table 24, over 70% of the IW community is Caucasian. It appears being Hispanic (with 69% leaving the community) or Asian/Pacific Islander (56%) has the most negative associations with retention.

PREDICTOR VARIABLE RACE OR ETHNICITY	RETENTION STATUS			PERCENTAGES	
	IN	OUT	TOTAL	IN	OUT
UNKNOWN	65	15	80	12.0%	2.5%
CAUCASIAN	378	457	835	69.7%	75.8%
AFRICAN-AMERICAN	48	54	102	8.9%	9.0%
HISPANIC	19	43	62	3.5%	7.1%
AMERICAN INDIAN/ALASKAN NATIVE	10	6	16	1.8%	1.0%
ASIAN/PACIFIC ISLANDER	18	23	41	3.3%	3.8%
OTHER	4	5	9	0.7%	0.8%
TOTAL	542	603	1,145	100.0%	100.0%

Table 24. Race or Ethnicity Description

Table 24 shows that Hispanics have the lowest retention. However, in Chapter III, Section C, subsection 1, the author noted an over-representation of personnel of Hispanic descent in the data set that were excluded from this data set. All of these excluded personnel are still in the IW community. Conservatively, those excluded personnel of Hispanic descent still in the IW community are over-represented by approximately 15. If that number were added into this data set, then the differences in Table 24 might not exist.

7. Jobs by NOBC

This subsection provides historical information on the relationship between IW retention and jobs by NOBC. As shown in Table 25, over half of all jobs in the data set are within the NOBC IW Group. However, other support or administrative jobs look as though they are associated with poor retention. The

confounding variable is whether the jobs have an effect on retention, or whether these personnel are sent to these jobs before leaving the IW community. There is no way of knowing this from the data.

PREDICTOR VARIABLE JOB BY NOBC	RETENTION STATUS			PERCENTAGES	
	IN	OUT	TOTAL	IN	OUT
NAVAL SCIENCE (2100-2199)	3	8	11	0.6%	1.3%
PERSONNEL (3000-3999)	11	31	42	2.0%	5.1%
ELECTRONIC ENG (GEN) (5900-5999)	5	18	23	0.9%	3.0%
STAFF & FLT CMD GROUP (9000-9099)	38	49	87	7.0%	8.1%
SHORE OPS (OIC/XO/CO) (9400-9499)	31	45	76	5.7%	7.5%
COMMS GROUP (9500-9599)	22	23	45	4.1%	3.8%
INTEL GROUP (9600-9699)	31	28	59	5.7%	4.6%
ADP GROUP (9700-9799)	37	35	72	6.8%	5.8%
IW GROUP (9800-9899)	291	291	582	53.7%	48.3%
UNKNOWN	60	51	111	11.1%	8.5%
OTHER	13	24	37	2.4%	4.0%
TOTAL	542	603	1,145	100.0%	100.0%

Table 25. Jobs by NOBC Description

Table 26 shows the categorical differences in retention between Jobs by NOBC. Among subcategories of Job by NOBC, Electronic Engineering (General) and Personnel have the lowest retention. Tracking retention within these groups over time may further assist the IW community in determining areas of poor retention.

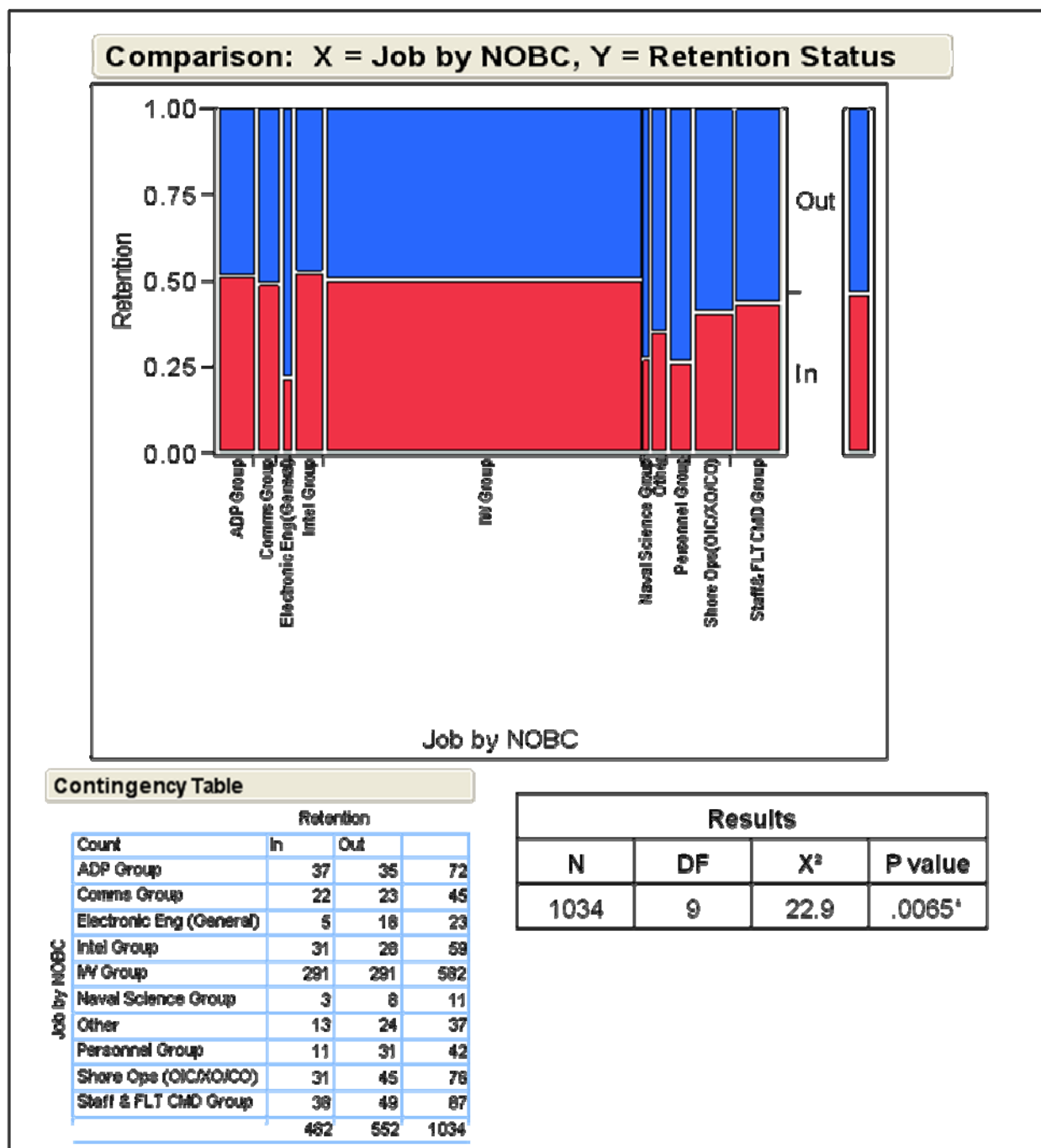


Table 26. Jobs by NOBC Categorical Differences

8. Prior Enlisted

This subsection provides historical information on the relationship between IW retention and prior enlisted officers. In Table 27, attrition rates for prior

enlisted officers look about the same rate as those for non-prior enlisted officers. A chi-square analysis confirms that there is no significant difference between prior enlisted and non-prior enlisted retention in this data set.

PREDICTOR VARIABLE	RETENTION STATUS			PERCENTAGES	
	IN	OUT	TOTAL	IN	OUT
UNKNOWN	4	13	17	0.7%	2.2%
PRIOR ENLISTED	247	263	510	45.6%	43.6%
NOT PRIOR ENLISTED	291	327	618	53.7%	54.2%
TOTAL	542	603	1,145	100.0%	100.0%

Table 27. Prior Enlisted Description

C. IW RETENTION INTERACTIONS

Unlike Section B of this chapter, there are no descriptive statistics for predictor variable interactions. For each identified interaction, however, there is a column plot that shows the significant interactions. For the interaction analysis, ROTC-S and ROTC Non-Scholarship are combined into one category labeled ROTC.

To find interactions, a logistic regression model was created with predictor variables. Initially, all predictor variables were used in this model, and a number of interactions were found with extensive searching. However, because of the overall poor fit of the model, there were concerns due to possible co-linearity within the data and type-one error.

Based on previous retention research in Chapter II, four predictor variables were selected for an interaction evaluation. These were Gender, Pay Grade, SoC, and Prior Enlisted. Figure 13 shows the top-level interactions among these four variables using a partition regression tree (Breiman, et al., 1993). As with the chi-square analysis, the red color represents the number of IWOs who remain in the IW community, while the blue color represents those officers who left. The regression tree finds the most significant interactions among the identified variables, as they relate to retention.

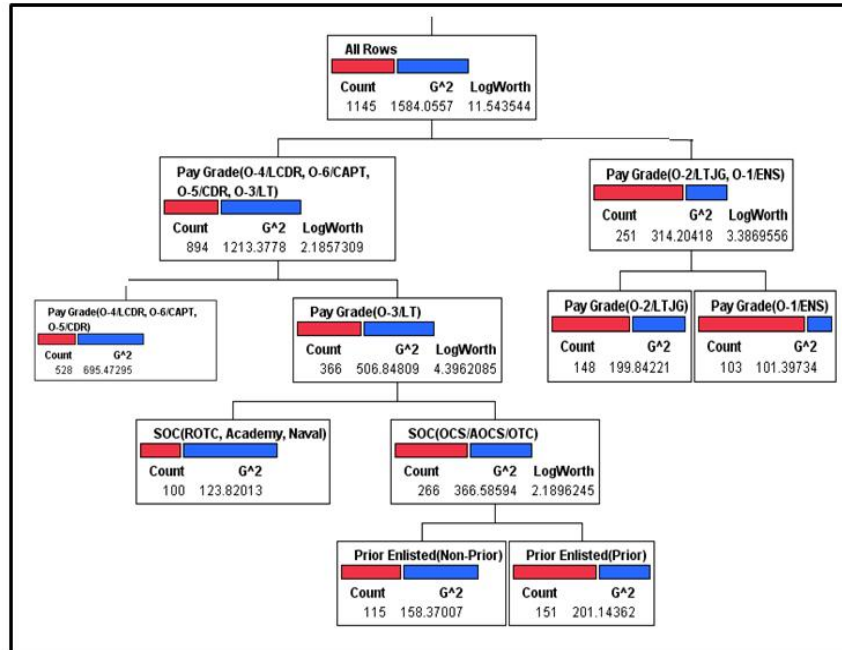


Figure 13. Partition Regression Tree

Further chi-square analysis of the factors shown in Figure 13 show two significant interactions with a p -value of less than .05. These two interactions are shown in the next two subsections.

1. Pay Grade by SoC

As explained in Section B of this chapter, retention at the O-4 pay grade may be less than what is expected. This interaction helps show which SoCs have lower or higher retention across the pay grades. Figure 14 shows retention rates across Pay Grades within both ROTC and OCS/AOCS/OTS SoCs.

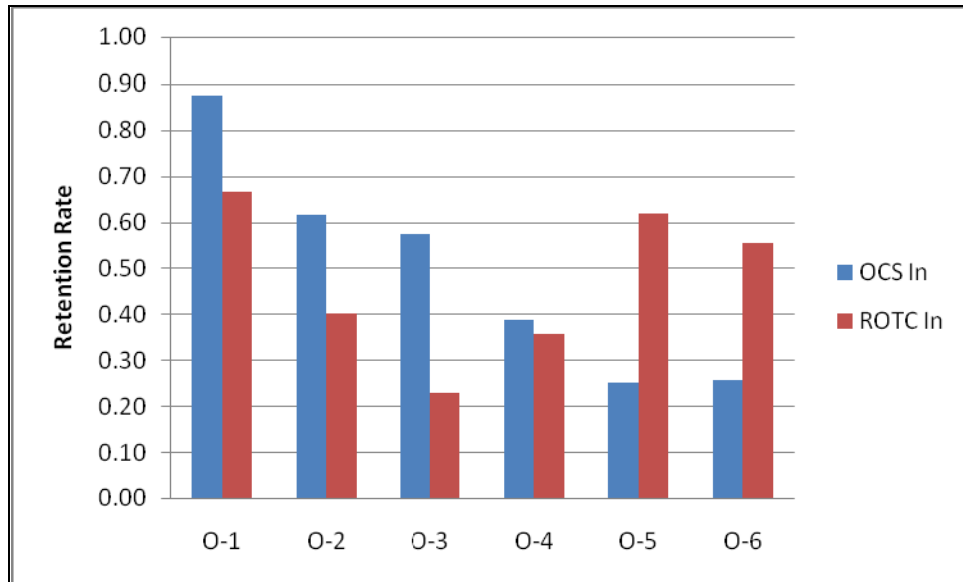


Figure 14. Difference in Retention Rates by Pay Grade for OCS and ROTC SoCs

Figure 14 shows higher retention within OCS/AOCS/OTS SoC at pay grades O-3 and below and the lower retention at higher pay grades. Conversely, those personnel with a ROTC SoC show lower retention than OCS/AOCS/OTS at O-3 and below and higher retention at O-5 and O-6. It appears personnel with a ROTC SoC stay in at higher rates, as those with an OCS/AOCS/OTC SoC leave the IW community. This is likely due to the high number of prior enlisted officers that enter the IW community through the OCS, AOCS, and OTS programs. This data set shows that 51% of IWOs commissioned from OCS are prior enlisted.

Unlike both the OCS/AOCS/OTC and ROTC SoCs, the Naval Academy showed no major differences in retention across pay grades. Retention for the Naval Academy SoCs stayed between 38% and 56% across all pay grades.

2. Prior Enlisted by SoC

This section shows the retention of prior or non-prior enlisted officers within each SoC. Figure 15 shows that prior enlisted officers with a commission from the Naval Academy and ROTC are significantly more likely to leave the IW

community than non-prior enlisted officers from those SoCs are. Conversely, prior enlisted officers commissioned from OCS/AOCS/OTC are much more likely to remain in the IW community than non-prior enlisted officers from that SoC are.

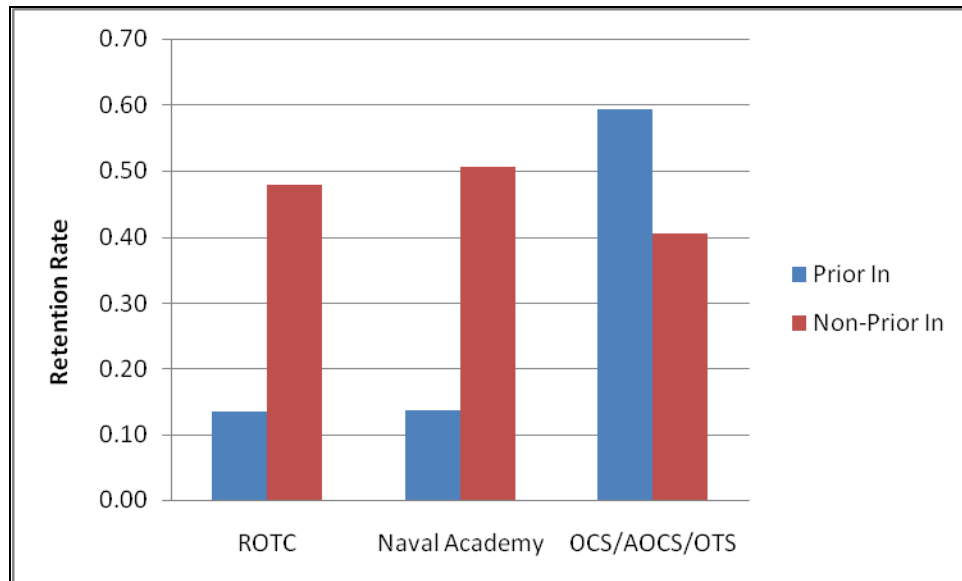


Figure 15. Difference in Retention Rates of SoCs by Prior Enlisted Status

D. MODELING IW RETENTION

This section describes an effort to model IW retention based on the factors used in Sections B and C. Such a model could be used to predict how important these factors are to the retention status of IW personnel. Unfortunately, the factors used in Sections B and C do not accurately model the retention of IW personnel. It is likely that the data set includes excess noise that makes retention trends difficult to identify.

The initial model of the basic factors used in Section B (minus Jobs by NOBC) shows a p -value of .0007*, yet an R^2 value of only .0456. Further analysis finds that a model of the initial values (minus Jobs by NOBC) and the interactions shown in Section C, provide another low p -value and a modest increase in R^2 , as shown in Figure 16.

Whole Model Test				
Model	-LogLikelihood	DF	ChiSquare	Prob>ChiSq
Difference	70.18013	63	140.3603	<.0001*
Full	536.28903			
Reduced	606.46916			
RSquare (U)		0.1157		
Observations (or Sum Wgts)		890		
Converged by Objective				

Figure 16. Retention Model with Major Interactions

Still, an R^2 value of 12% hardly inspires confidence in the model. Unfortunately, it was not possible to create a better model, regardless of the primary factors used. Future, successful modeling efforts may be possible if more data on those personnel that leave the IW community were available. Tracking and maintaining quality information on personnel who leave the community could assist future IW retention research.

E. LONGITUDINAL MONTHS OF IW SERVICE

This section gives a longitudinal view of when IW officers leave the IW community up to 118 months or 9 years, 10 months of service within the IW community. It is important to note that this measurement set does not represent career LOS; rather, it is the length that officers serve after accepting the IW designators 1610 or 6440. Within the DMDC data set, officers in the IW community with the aforementioned IW designators were matched with the first and last month they served under the IW designators 1610 and 6440. These longitudinal data are shown in Figure 17 with the X-axis as the number of personnel leaving and the Y-axis as the months after entering the IW community. As shown, IW officers leave the community most frequently between 60 and 90 months (5-7.5 years) and 100 and 118 months (8.3-9.8 years) of IW service. That is, they enter the IW community, normally serve between 60 and 90 months or 100 and 118 months, and then leave the IW community. Data past 118 months of IW service was not available.

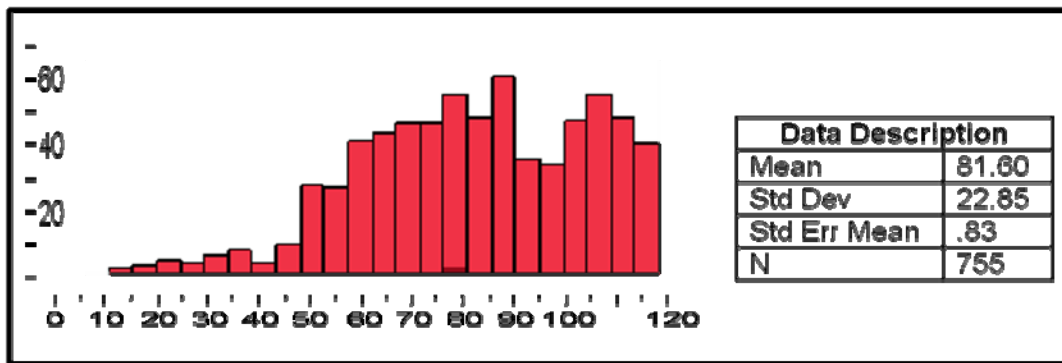


Figure 17. LOS After IW Designation

Additionally, there is a difference in the number of months served in the IW community between prior enlisted officers and non-prior enlisted officers. This was found by analyzing only the data of officers who left the IW community between FY97 and FY07. There were not enough personnel at the grades of O-1 and O-2 who got out of the IW community to analyze. Figures 18 through 20 show the difference in months of IW service between prior enlisted and non-prior enlisted officers of grades O-3 through O-5. The x-axis represents months of IW service while the y-axis represents the number of IWOs that separated.

As Figures 18 and 19 show, the number of O-3 and O-4 IWOs who leave the IW community before serving 120 months (10 years) within the community is much greater among prior enlisted officers (as shown by the N statistic). This difference decreases significantly in the pay grade of O-5. The percentages for all pay grades are shown in Table 28.

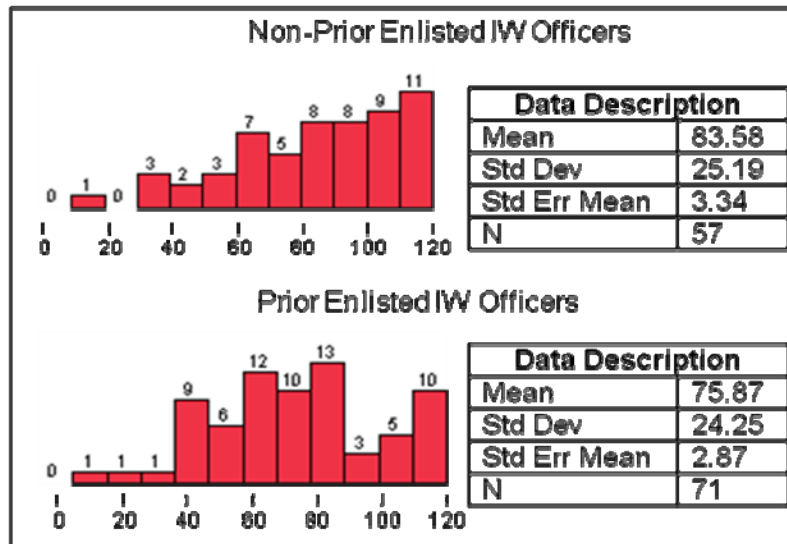


Figure 18. O-3 Length of IW Service Before Leaving

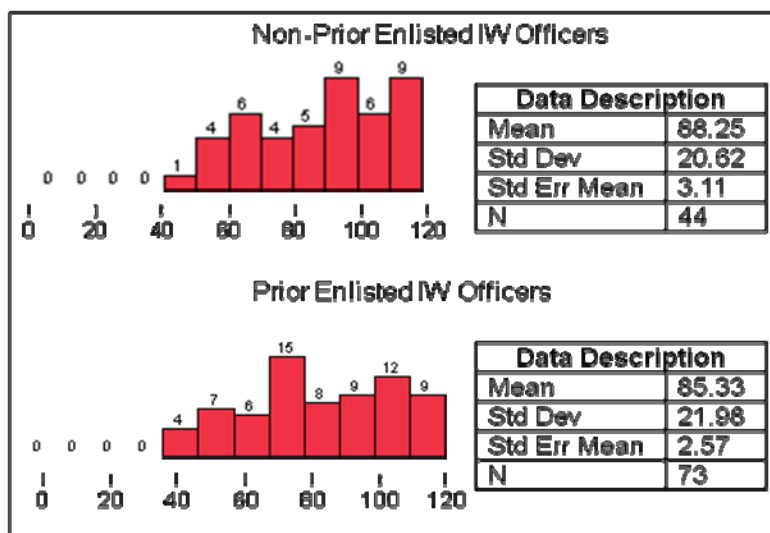


Figure 19. O-4 Length of IW Service Before Leaving



Figure 20. O-5 Length of IW Service Before Leaving

Rank	% Prior Enlisted	% Non-Prior Enlisted
LT/O-3	55%	45%
LCDR/O-4	62%	38%
CDR/O-5	51%	49%

Table 28. IWOs Leaving Prior to 10 YOS in the IW Community

Table 28 shows a very high percentage of prior enlisted personnel leaving the community in the pay grade of O-4 before serving 10 years in an IW designator. This may be of concern to the IW community.

F. IW CIVILIAN EQUIVALENT PAY

Section F shows the results of an initial analysis of the civilian equivalent pay for an IWO. This section converts the top 15 IW NOBC jobs into a single average for an IW civilian equivalent pay. That amount is then compared to current military pay to find a CSRB amount. The difference in this pay may be useful when implementing a CSRB retention solution.

1. IW Officer Civilian Equivalent Pay

Table 29 shows the military job, NOBC, and the civilian equivalent job that matches. As shown in Table 29, 9 of the 15 NOBC jobs are classified as

General and Operations Manager, and two are classified as Management Analyst. It should be noted that the salary of a General and Operations Manager is weighted to account for approximately 80% of the IW civilian equivalent pay. As noted earlier, weight is dependent upon the percentage of IW officers that work in that field.

NOBC	MOC	SOC(s)	Weight
9815	Operations Officer, Naval Security Group	General and Operations Manager	24.8%
9851	Direct Support Officer, Naval Security Group (Surface)	General and Operations Manager	22.0%
9850	Direct Support Coordinator, Naval Security Group	General and Operations Manager	7.1%
9860	Special Operations Officer, Naval Security Group	General and Operations Manager	5.8%
9735	Computer Systems Analyst	Computer Systems Analyst Database Administrator	2.7% 2.7%
9421	Commanding Officer, Shore Activity	General and Operations Manager	4.8%
9853	Direct Support Officer, Naval Security Group (Subsurface)	General and Operations Manager	4.5%
9817	Operations Watch Officer, Naval Security Group	General and Operations Manager	4.3%
9065	Staff Operations and Plans Officer	Management Analyst	3.7%
9436	Executive Officer, Shore Activity	General and Operations Manager	3.4%
9852	Direct Support Officer, Naval Security Group (Air)	General and Operations Manager	3.4%
9117	Staff Plans Officer	Network Systems and Data Communications Analyst	3.2%
9087	Communications Security Officer	Management Analyst	2.9%
9640	Operational Intelligence Officer (General)	None Available	0%
9825	Information Processing and Reporting Officer, Naval Security Group	Computer and Information Systems Manager	2.9%
3290	Training Officer	Training and Development Manager	1.8%

Table 29. Conversion of Top 15 IW Jobs by NOBC

NOBC job 9640 showed no available civilian equivalent job, and is therefore excluded. Its original 2.9% weight was divided by the remaining 14 NOBC jobs and distributed evenly among them. Additionally, the NOBC job

classified as Computer Systems Analyst showed two possible civilian equivalent jobs. Both jobs are used and the weight for the Computer Systems Analyst is split evenly between them.

Table 30 shows the civilian equivalent pay broken down by the seven IW civilian equivalent jobs. Wages shown are national estimates. The column third from the right includes the relative standard error (RSE) given by the Bureau of Labor Statistics (2008).

SOC(s)	Mean Hourly Wage	Mean Annual Wage	75 th Percentile Wage	Wage RSE	Weight	Weighted Total Wage
General and Operations Manager	\$51.91	\$107,970	\$137,020	0.2%	80.1%	\$108,753
Computer Systems Analyst	\$37.90	\$78,830	\$95,810	0.4%	2.7%	\$2,587
Database Administrator	\$35.05	\$72,900	\$91,850	0.8%	2.7%	\$2,480
Management Analyst	\$39.87	\$82,920	\$99,700	0.5%	6.6%	\$6,580
Network Systems and Data Communications Analyst	\$35.50	\$71,100	\$90,740	0.4%	3.2%	\$2,904
Computer and Information Systems Manager	\$57.07	\$118,710	\$141,890	0.4%	2.9%	\$4,115
Training and Development Manager	\$45.11	\$93,830	\$115,570	0.6%	1.8%	\$2,080
Civilian Equivalent Wage						\$129,499

Table 30. IW Civilian Equivalent Pay Wages

The Bureau of Labor Statistics calculates annual wages by multiplying hourly wages by 2,080 hours, which represents year-round, full-time work. Each civilian equivalent mean annual wage is adjusted by its NOBC job weight to arrive at a civilian equivalent compensation total for an IWO. As shown at the bottom right of Table 30, the civilian equivalent wage for an IWO, according to the Bureau of Labor Statistics 75th Percentile wage, is \$129,499.

2. Difference between IW Civilian Equivalent and Military Pay

The official Secretary of Defense military compensation calculator was used to gather pay information on pay grades O-3E, O-4, and O-5. The information provided is shown in Table 31. All inputs used the U.S. INCONUS average for BAH, with standard federal tax deductions and a state tax rate of 5%.

Since approximately 70% of the IW community is married, the pay for all ranks was calculated to have at least one dependent. The difference in pay between one dependent and multiple dependents is minimal. This should better approximate the national average BAH rates for IWOs with dependents.

Rank	YOS	Base Pay	BAS	BAH	Tax Break	Total	Difference in Pay (Annual)
LT/O-3E	16	\$71,672	\$2,676	\$21,720	\$8,323	\$104,392	-\$25,107
LT/O-3E	18	\$73,760	\$2,676	\$21,720	\$8,621	\$106,778	-\$22,721
LCDR/O-4	18 & Up	\$80,680	\$2,676	\$23,148	\$10,222	\$116,726	-\$12,773
CDR/O-5	20	\$92,369	\$2,676	\$24,972	\$11,849	\$131,867	+\$2,368
CDR/O-5	22	\$95,144	\$2,676	\$24,972	\$11,849	\$134,642	+5,143

Table 31. Difference Between IW Civilian Equivalent and Military Pay

Additionally, each rank had an input for YOS as shown in the second column in Table 31. The ranks and YOS used were based upon the previous assumption that an IW CSRB would go to higher ranks with more experience, possibly eligible for retirement. Numbers are rounded to the nearest whole dollar.

As shown in the right-hand column of Table 31, the difference in annual pay between an IW civilian equivalent and senior pay grades O-3E and O-4 is substantial. Pay grade O-5, however, seems to be paid an amount similar to the civilian market's 75th percentile wage.

V. FSA DISCUSSION

A. OVERVIEW

This chapter summarizes the FNA and provides functional solutions for retention issues identified in the FNA. The FNA identified retention issues and possible capability gaps, summarized in Section B. The FSA provides realistic solutions for these issues, shown in Section C.

B. FNA SUMMARY

This section summarizes the results of the FNA. In Chapter III, Section B, the FAA showed a possible capability gap in the number of IWOs in the grade of O-4 and O-5. The FNA looked at historical IW data to empirically show this and other capability gaps within IW retention. These results are split into two subsections. The first subsection (Significant results) includes statements of fact and results that were statistically significant below a .05 *p*-value. The second subsection (Areas for improvement) shows overall areas of low retention that the IW community may want to improve.

1. Significant Results

- Retention over the last decade at pay grade O-3 is 48.0%.
- Retention over the last decade at pay grade O-4 is 36.6%.
- Retention over the last decade at pay grade O-5 is 37.9%.
- Retention over the last decade at pay grade O-6 is 37.0%.
- The IW O-4 pay grade has the lowest retention rate.
- Officers commissioned via OCS/AOCS/OTS show a decrease in retention, as rank increases. Conversely, officers commissioned via ROTC show an increase in retention, as rank increases. This is likely due to the number of prior enlisted IWOs commissioned via OCS/AOCS/OTS (51%).

- Prior enlisted officers with a commission from the Naval Academy and ROTC are significantly more likely to leave the IW community than are non-prior enlisted officers from those SoCs.
- Prior enlisted officers commissioned from OCS/AOCS/OTC are significantly more likely to remain in the IW community than are non-prior enlisted officers from that SoC.
- Within the first 9.8 YOS, IWOs are most likely to leave the IW community between 5-7.5 YOS and 8.3-9.8 YOS.
- Sixty-two percent of those who left the IW community in the pay grade of O-4, prior to 10 YOS in an IW designator, were prior enlisted.

2. Areas for Improvement

There are some easily identifiable gaps in retention, especially at the pay grade of O-4. Other retention issues are more complex. While this list is not all-inclusive, it does identify areas where the IW community may want to improve retention. These are the areas of lower retention when compared to other IWOs within each predictor variable(s).

- All officers at the grade of O-4 (assuming O-4 retention should be higher than 36.6%).
- All officers at the grade of O-5 (assuming O-5 retention should be higher than 37.9%).
- Prior enlisted officers commissioned through ROTC and the Naval Academy.
- Non-prior enlisted officers commissioned via OCS/AOCS/OTS.

C. FUNCTIONAL SOLUTION ANALYSIS

Both materiel and non-materiel approaches to improving retention were covered in Chapter II. In the case of retention, materiel solutions most likely involve a monetary retention bonus. Non-materiel approaches may include nonmonetary policy changes, detailing priority changes, sabbaticals, etc. It is

important to remember that a solution for one retention capability gap may not be a viable solution for another. Additionally, a materiel solution cannot discriminate by gender, race, or prior enlisted status. This section will provide materiel and/or non-materiel solutions for each possible IW retention capability gap. These suggested solutions should be strategically responsive, feasible, and realizable (Joint Chiefs of Staff, J-8, 2006).

Section D will highlight areas of note for the IW community specifically related to a CSRB solution. Before implementing any retention solutions, the IW community should first think about minimum billet levels and the efficiency and effectiveness of using civilian employees in place of military personnel. Additionally, these solutions should be reanalyzed in terms of short-term and long-term IW community goals. Some solutions may be effective now, but may not be effective in the long term. In addition, these are only suggested solutions. To find out the most effective solutions, an effective survey, exit poll, or interview of IWOs similar to the one described in the next chapter would be helpful.

As noted in Chapter II, the best way to increase retention is to offer many flexible retention solutions. The more retention opportunities and choices an officer has within the Navy, the more likely he or she is to remain in service. FNA issues and FSA solutions are listed below.

1. Improve Retention of IWOs at the Grade of O-4

The implementation of flexible work arrangements, geographical stability, and improved work place policies may help retain more LCDRs. Additionally, these midgrade officers may want to see more leadership billets, as was mentioned in Chapter II. A monetary CSRB solution for O-4s (with less than 25 YOS, as required by law) may be the best solution here for the short term. Additionally, other areas of a CSRB are discussed in Section D of this chapter. As shown in Table 31, the suggested CSRB amount for an experienced O-4 (with

18 YOS or higher) is \$12,000-\$13,000 annually. If the CSRB is offered to less experienced O-4s, Table 31 should be recalculated and the amount of the CSRB should change.

2. Improve Retention of IWOs at the Grade of O-5

Monetary bonuses may not be the best solution to retain IWOs in the grade of O-5. Personnel at the grade of O-5 already earn approximately the same as the 75th-percentile civilian equivalent.

Geographical stability or flexible work arrangements may be effective solutions. However, considering the feedback from the IW survey mentioned in Chapter II, the best solution might be to provide these officers with more IW-related leadership opportunities, should they remain in service.

3. Improve Retention of Prior Enlisted Officers Commissioned via ROTC and the Naval Academy

The reason for poor retention of these officers is unknown. Further research is needed to understand the lower retention of prior enlisted officers from these SoCs.

4. Improve Retention of Non-Prior Enlisted Officers Commissioned via OCS/OACS/OTS

Again, it is unknown why there is low retention within this category. Further research in this area is needed.

D. CSRB CONSIDERATIONS

As discussed in Chapter II, a CSRB may be a valid solution for the IW community's midgrade shortages. First, a specific LOS eligible for a CSRB should be defined. While the need for O-4s between 12 and 24 YOS is easily identifiable, there are complexities involved due to prior enlisted service, FOS, lateral transfers, and department head tours. It is recommended that the IW community look into a bonus program dependent upon YOS and pay grade. Additionally, a program that encourages personnel to accept orders to areas of

IW need should be included into the program. The IW community may also use this opportunity to ensure that personnel eligible for this CSRB are qualified in a certain area, and have received certain training, certificates, or degrees. This kind of CSRB eligibility would require the community to first identify and develop these critical training programs or certificates.

It is also suggested that personnel only be eligible for the IW bonus if they are serving in an area of need, or performing IW critical skill-related activities more than 75% of the time, with the exception of those in an IA/GSA billet. Additionally, research should be conducted on the differences between the effectiveness of a bonus auction and a traditional bonus. Once these issues are assessed, the IW community should show the cost effectiveness of such a CSRB, as compared to the cost of unmanned billets. This is similar to the process described in Chapter II.

The most important thing the IW community can do is to ensure it receives input from those who need to be retained. This can be done via a survey, exit poll, or interviews. Such a survey was developed and given to IWOs at NPS. Chapter VI discusses this survey and the results.

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VI. MEASURE OF SOLUTION EFFECTIVENESS

A. INTRODUCTION

To measure the solution effectiveness of both monetary and nonmonetary programs identified in the FSA, a retention survey for IWOs was created, fielded, and analyzed at NPS. This survey provides the IW community with a fully developed tool that can provide quality input on the retention behavior and opinions of IWOs. The survey was developed in such a manner to provide the following information about the participants:

- Overall job satisfaction
- Job satisfaction based on location
- Areas for community retention improvement
- Importance of various retention factors towards individual retention decisions
- Individual retention intentions
- Opinions about the civilian equivalent job market.
- Opinions concerning an IW CSRB
- The take-rate behavior for an IW CSRB
- Trade-offs between a CSRB and nonmonetary programs
- Other suggestions for IW leadership
- Other suggestions for improving this type of survey

B. SURVEY REPORT OVERVIEW

In support of the objectives, a Web-based survey was given to NPS IWOs in June 2009. The survey consisted of 41 questions given to each of 34 students. Section C describes the survey methodology, including how the instrument was designed and fielded. The survey results are shown in Section D. Of the initial 41 questions, 17, shown in Section D, subsection 2, were demographic in nature. The remaining 24 questions are shown in Section D, subsection 3. A discussion of survey results can be found in Section E, followed

by future survey recommendations. The actual survey instrument used is included in Appendix C. When viewing the survey instrument in Appendix C, it is important to remember that some participants skipped some questions, dependent upon earlier responses.

C. SURVEY METHODOLOGY

1. Target Population

The population for this survey was NPS IWOs enrolled in a degree program. According to IW community records, the total population was 38. Two personnel were excluded due to having transferred out of the community. This left 36 eligible participants.

2. Instrument Review and Pretesting

Because the population of IW students at NPS was so small, the target population was excluded from reviewing and pretesting the instrument. Instead, instrument review and pretesting was done via six students from the Human Resource (HR) and Aviation communities. Five of the six students had previous knowledge in survey research methods. These students were asked to treat this survey like one that their own community would give them. This provided valuable feedback to ensure a smooth fielding process. Total response time to take this survey averaged 20 minutes during the fielding process.

3. Fielding Procedures and Response Rates

Upon completion of pretesting and Institutional Review Board (IRB) approval, the survey was fielded. Respondents were contacted two to three times during the process. The initial contact was a nonpersonalized, anonymous e-mail sent from the author notifying students of the survey they would receive the following day. This e-mail was sent at 1100 on Monday, June 1, 2009. At 1200 on Tuesday, June 2, 2009, a personalized e-mail containing an embedded hyperlink to the survey was sent to all participants. Thirty, or 83%, of the participants completed the survey within one week of this e-mail.

The following week, on Tuesday, June 9, 2009, a single follow-up personalized e-mail was sent to six respondents that had not yet completed the survey. This e-mail served as a reminder that these participants had not yet completed or opted out of the survey. Both the second and third e-mails were sent from within SurveyMonkey. Samples of all e-mails sent are included in Appendix D. Four additional participants completed the survey within the second week after the follow-up e-mail. The final response rate for the survey was 34 of 36 eligible participants, or 94%.

D. RESULTS

1. Analysis Approach

The survey data were exported from SurveyMonkey to an Excel file containing e-mail addresses of respondents and responses to each question. While the analysis was conducted at the individual level, certain data were aggregated to ensure participant anonymity in published results. Individually identifiable data in open-ended responses was generalized to ensure participant anonymity.

2. Respondent Demographics

All respondents were U.S. Naval IWOs attending NPS. Figures 21-25 show various demographic data for participants. While race should be included in future surveys of this sort with larger populations, it was not included in this survey. Figure 21 shows participant pay grades. This shows an over-representation of more senior IWOs compared to their prevalence in the community. Participant data show that 51.5% of participants are warfare qualified. This seems to accurately represent the number of warfare-qualified officers in the IW community, and resembles IW warfare qualification assumptions made in Chapter II, subsection G.

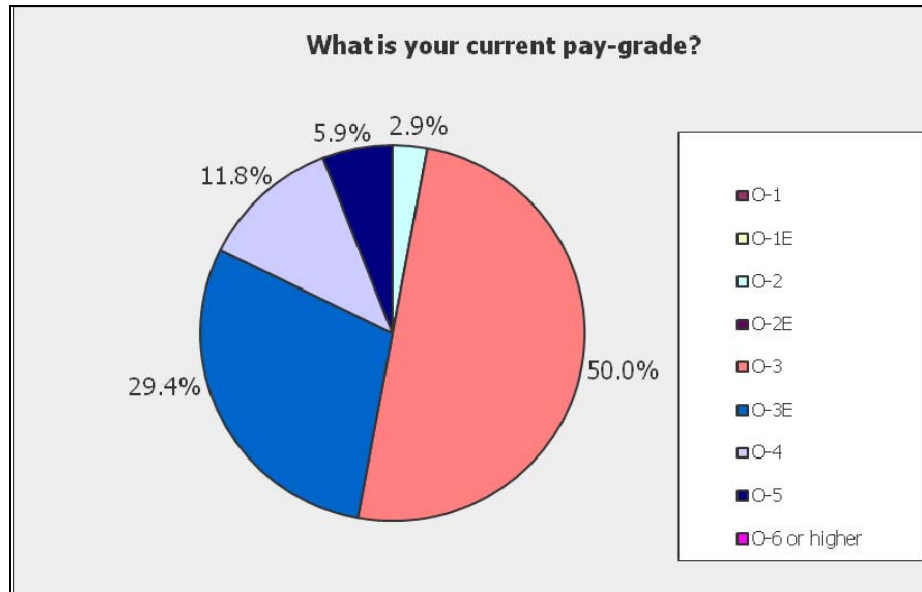


Figure 21. Participant Pay Grades

Figure 22 shows that the 74% of participants have been in the IW community for less than eight years.

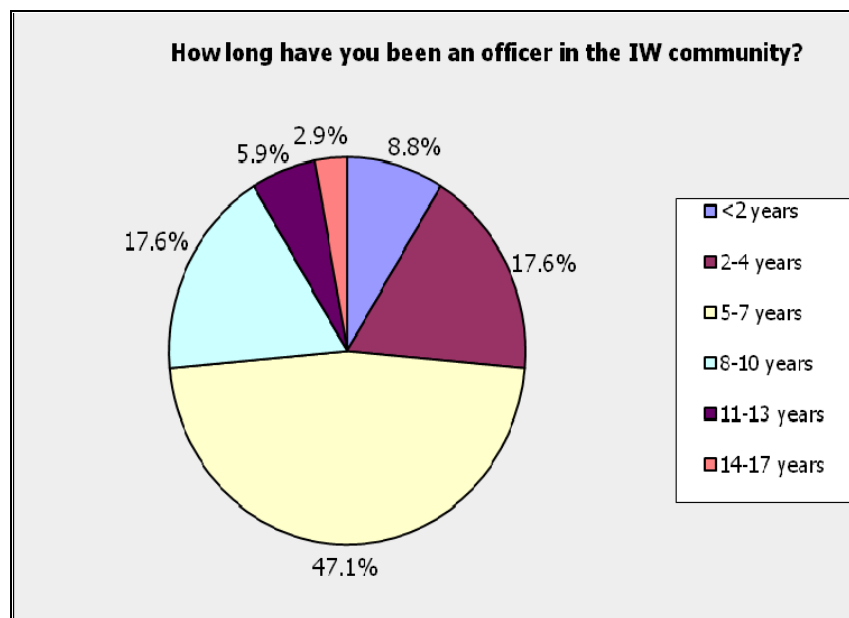


Figure 22. Participant LOS in the IW Community

Figure 23 shows a possible over-representation of participants with OCS as their SoC. While this matches the historical data analyzed in Chapter IV, data

from FY03 to present in Chapter II, Table 11 showed that the number of OCS graduates assessed has decreased. Figure 24 shows the age of participants. As with high levels of experience shown by rank in Figure 21, average participant age is older than it would have been in a random sample of IWOs.

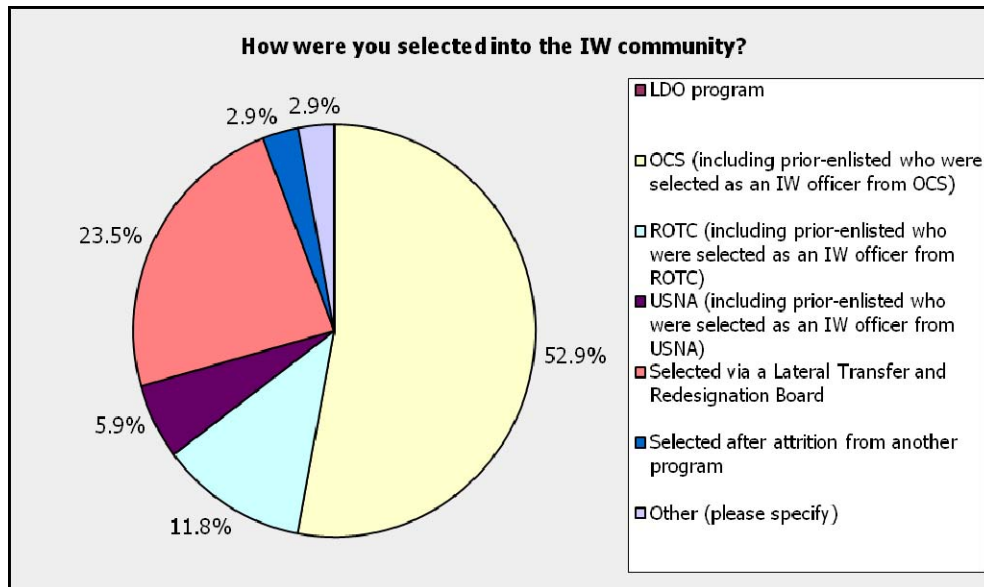


Figure 23. Participant SoC

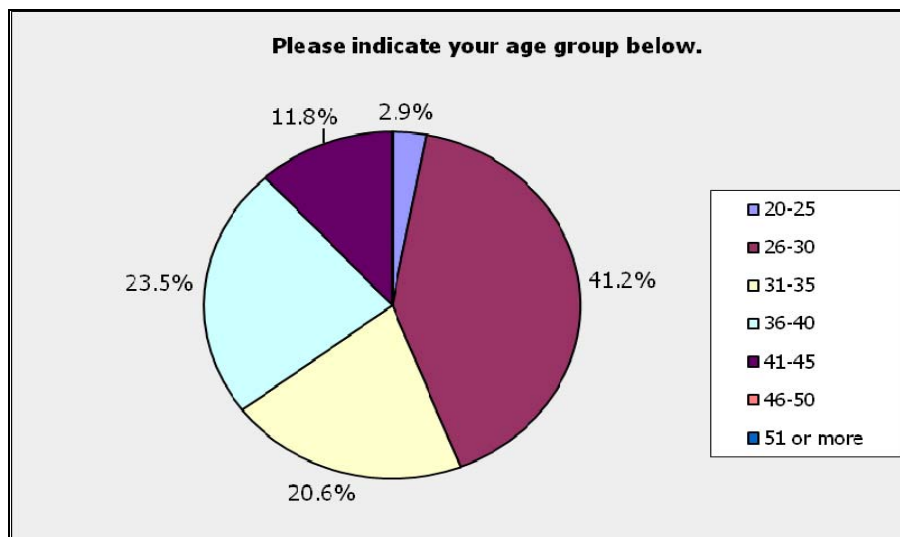


Figure 24. Participant Age

Males accounted for 94.1% of the participants, and 5.9% were female. This is an over-representation of males in the survey population. Because of this over-representation, gender interaction analysis is excluded from the survey results.

About seventy-three percent of participants were married. This closely resembles the entire population of married IWOs at approximately 70%. Of those participants that were married, only 8% were not co-located with their spouse, and none of those married were in a joint military marriage. Other demographic questions showed that 56% of participants had children. Of those with children, 95% had children that lived within their household, while 26% of had children that lived in another location. Twenty-one percent of participants had children both in their household and in other households.

Twenty percent of participants have experience on IA/GSA tours. Of these participants, all were deployed fewer than 10 months. Approximately 41% of respondents were prior enlisted. This closely approximates the percentage of all IW prior enlisted officers (44%). Among those participants whom had prior enlisted service, the range of this service spanned across 2-14 years, as shown in Figure 25. As shown, 64% of prior enlisted participants had between 7 and 14 prior enlisted YOS.

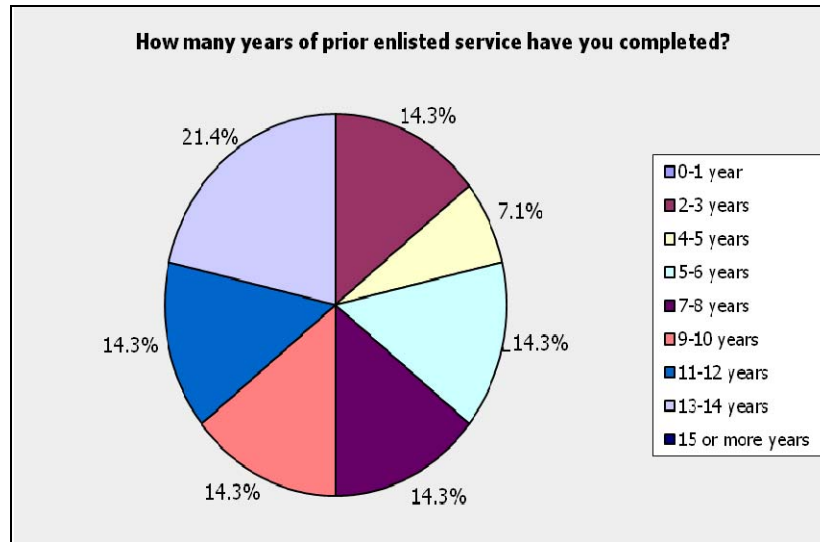


Figure 25. Years of Prior Enlisted Service

3. Detailed Survey Results

Histograms of responses generally show the set of responses on the X-axis, and the count associated with each response on the Y-axis.

To find means for questions that used a four- or five-point Likert scale shown in both columns below, the following coding was used:

Five-Point Likert Scale	Four-Point Likert Scale
Very Satisfied = 5	Very Important = 4
Satisfied = 4	Important = 3
Neutral = 3	Some Importance = 2
Dissatisfied = 2	No Importance = 1
Very Dissatisfied = 1	

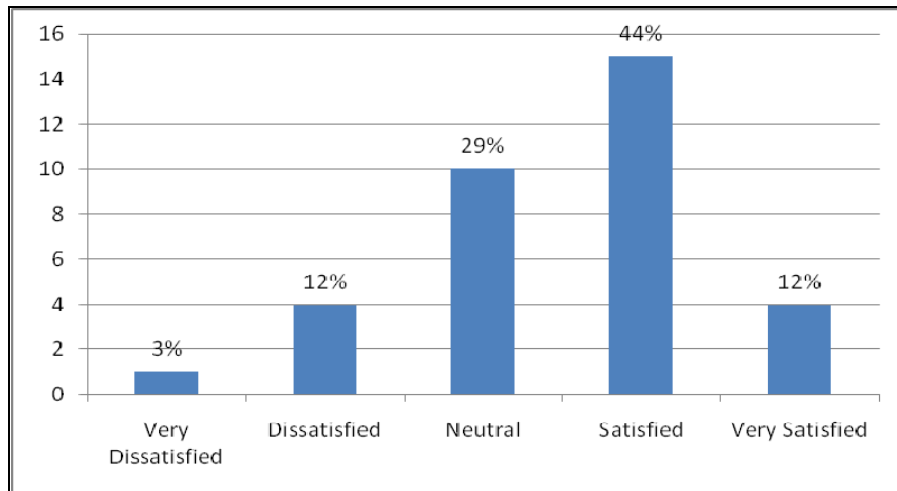
The means are based only upon results of those who answered a question. Those who answered Not Applicable (N/A), or skipped a question, are not included in the calculation for that question. Means are not given for yes or no questions.

It is important to note that within the last year, community leaders have spoken to the participants about IW retention issues. While this does not change the results, it may have biased the opinion of IW retention issues on several open-ended questions. In addition, this survey is not a reflection of all IWOs, but

rather, those officers stationed at NPS. As such, it is highly recommended that the IW community administer this survey to IWOs Navy-wide. This will ensure the accurate identification of IWO opinion and CSRB take-rate behavior.

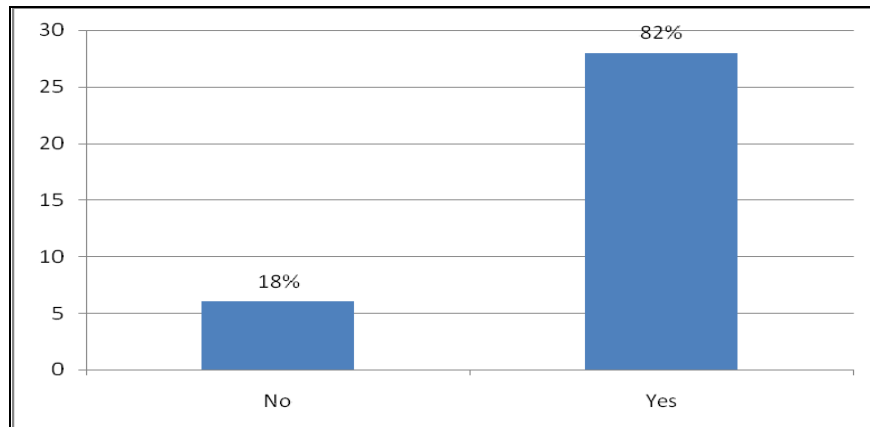
Questions 1–24 are shown below. The text of each question is stated to the right of the question number in bold font, followed by a description of the results.

Q1) Overall, how satisfied or dissatisfied are you with your job as an IW officer?



Mean = 3.5

Q2) In your opinion, does the IW community have any retention issues?



Question 1 shows that participants are generally satisfied with their job as an IWO; however, Question 2 shows that they think the community has retention issues. Question 3 shows what participants thought were the most important

factors that negatively affect retention in the IW community. As shown below, civilian career opportunities, IW leadership, and pay were the top three, closely followed by time spent away from family and lack of command opportunities.

Q3) In your opinion, what are three major factors that affect IW COMMUNITY retention? Please select the THREE most important factors that you think negatively affect IW COMMUNITY retention.

These response choices were randomized for each participant and are shown in Table 32. This question also offered a selection of “Other”: Ten participants selected this option and gave specific feedback, shown in its entirety in Appendix E. Below is a very generalized overview of this feedback:

- 6 of 10 comment on the lack of Navy and community direction and structure.
- 2 of 10 comment on the issue of retaining LDO O-4s.
- 1 comments on the quality of lateral transfers.
- 1 comments on the lack of a good IA/GSA plan.
- 1 comments on the lack of an updated pay system.
- 1 comments on the lack of education opportunities.
- 1 comments on the lack of quality/updated shipboard equipment.
- 1 comments on the lack of job satisfaction.

Answer	Count	%
Career opportunities in the civilian job market	10	14
IW leadership	10	14
Not enough pay	9	13
Time spend away from family	8	11
Lack of command opportunities (i.e., CO or XO)	7	10
IA or GSA	6	08
Lack of education/training opportunities	5	07
IW culture	4	06
Navy leadership	3	04
Frequent relocations	3	04
Lack of having a mentor	2	02
Long work hours	2	02
Spouse employment	2	02

Table 32. Factors that Negatively Affect IW Community Retention

Q4) Please rate the importance of the following factors, when you make your decision to continue or discontinue your Navy service.

These levels, or factors, were randomized for each participant. Each factor's mean is given on a scale, where 4 is Very Important and 1 is of No Importance. Histograms for each factor are available in Appendix F. Table 33 shows the most important factors selected when participants are making the decision to continue or discontinue Naval service.

On the four-point Likert scale, only five factors had a mean that ranked above 3.0 or Important or higher. Among the factors in this question, the one with the largest reported impact on retention is IW leadership, followed closely by advancement, education and training opportunities, pay, and career opportunities in the civilian job market. Of the factors used, coworkers, spouse employment, the influence of a mentor, and IA/GSA tours rank among the lowest that affect retention. At between 2.23 and 2.39, these items were viewed as having "Some importance" (2.0), but not enough on average to be "Important" (3.0).

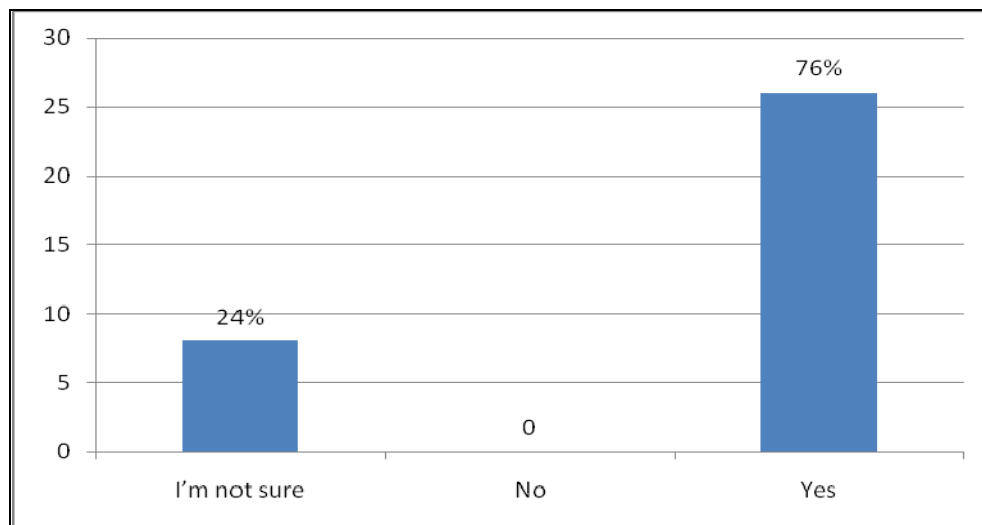
Question 4 also allowed participants to list other factors they felt were important. Five participants chose to do so. Their full responses can be viewed at the end of Appendix F. Below is a very generalized overview of their responses, followed by the given importance.

- Community Direction—Very Important.
- Training in cryptology as a technical expert/manager—Very Important.
- Training for technical abilities in computer network operations—Very Important.
- Job Satisfaction—Very Important.
- Meaningful Job—Very Important.
- Community Transition—Unspecified Importance.
- Opportunity for Command—Unspecified Importance.

Answer	Mean (Likert Scale of 1-4)
IW leadership	3.29
IW advancement to the next pay grade	3.24
Education/training opportunities	3.24
Pay	3.15
Career opportunities in the civilian job market	3.03
Time spend away from family	2.97
IW culture	2.85
Navy leadership	2.85
Lack of command opportunities (i.e., CO or XO)	2.70
Relocations	2.67
Work hours	2.56
Navy culture	2.51
IA or GSA	2.39
The influence of a mentor	2.25
Spouse employment	2.23
Coworkers	2.23

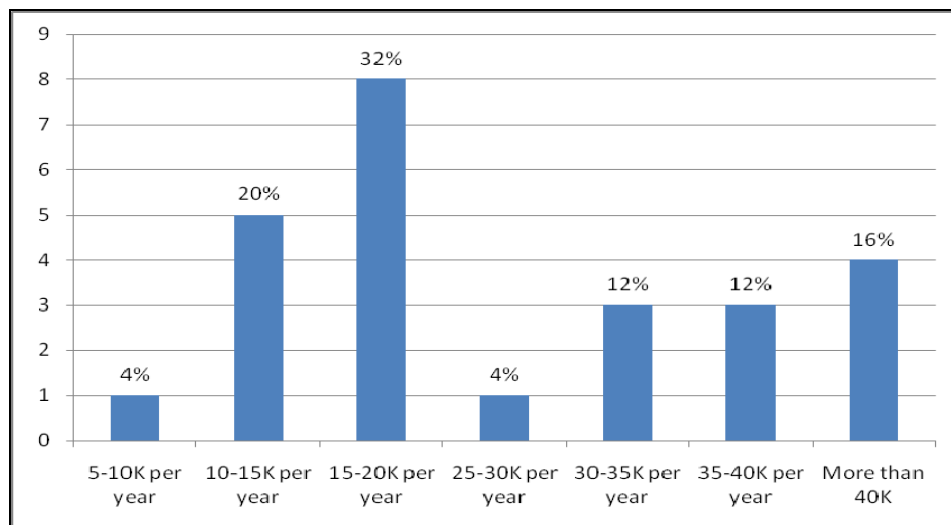
Table 33. Personal Retention Factors by Level of Participant Importance

Q5) Do you think you can make more money in a civilian equivalent job?



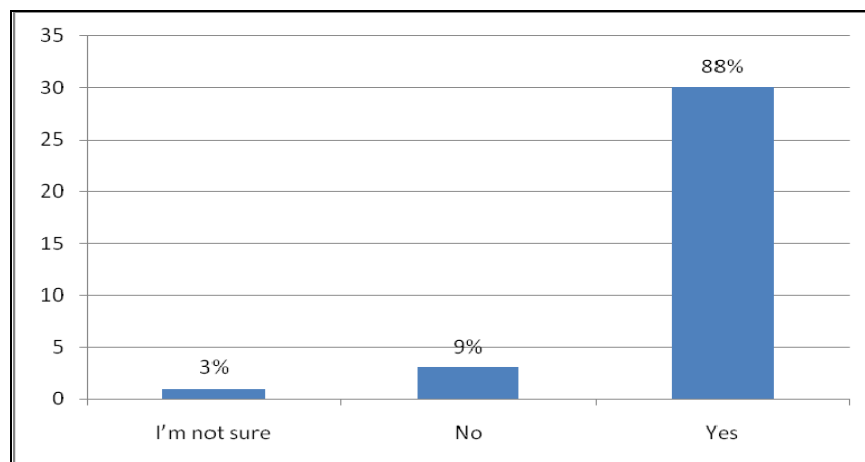
As shown above, all respondents thought they either could earn more money in a civilian equivalent job, or were unsure. Those participants that answered yes to Question 5 were directed to Question 6. All others were directed to Question 7.

Q6) How much MORE money do you think you can make in a civilian equivalent job compared to what you make now?



As shown, more than 50% of participants thought they could earn between \$10,000 and \$20,000 more per year in a civilian equivalent job. To find an overall mean, each participant's choice was given the median for that category (with more than 40K assigned a value of 45K). Overall, the participants thought they could earn, on average, about \$25,000 more per year in a civilian equivalent job.

Q7) Do you think a Critical Skills Retention Bonus (CSRB) would be helpful in retaining more IW officers?



As shown above, this question shows that 88% of participants thought a CSRB would be helpful in retaining IWOs. Those participants who answered yes or no for Question 7 were directed to Question 8. The one participant who was not sure was directed to Question 9.

Q8) Why do you think a Critical Skills Retention Bonus (CSRB) will or will not be helpful? Please provide concise reason(s):

This open-ended question was answered by 33 of 34 respondents. Many participants gave multiple comments, both negative and positive. Their specific inputs can be found in Appendix G. Below is a very generalized overview of this feedback:

Positive CSRB Comments

- 12 comment on closing the pay gap between military and civilian pay.
- 6 comment on keeping prior enlisted retirees.
- 5 comment on making up for difficult family lives.
- 4 comment on having better pay equality between the IW community and other designators.
- 4 comment on keeping quality officers at specific decision points.
- 2 comment on increasing pay to keep experienced officers.
- 2 comment that increased money gives increased commitments.
- 2 comment that a CSRB would force the community to better identify and communicate critical skills.

Negative CSRB Comments

- 2 comment that the issue is with IW leadership and culture, not pay.
- 2 comment that personnel who desire to stay will stay with or without the bonus, while those who desire to leave will leave.
- 2 comment that pay will not affect prior enlisted officers.
- 1 comments that community direction, training, and path for advancement is more important.

Q9) Are you seriously considering leaving Naval service in the next 5 years?

Answer	Count	%
Yes, I am seriously considering RETIRING from service in the next 5 years	11	32
Yes, I am seriously considering RESIGNING in the next 5 years	9	26
No, I am not seriously considering resigning or retiring in the next 5 years	14	41

The chart above shows 20 of 34 participants (58%) stated they were seriously considering retiring or resigning in the next five years. Those who were not skipped to Question 14. Those who were seriously considering resigning answered Questions 10 and 11. Those who were seriously considering retiring answered Questions 12 and 13.

Q10) Why are you considering resigning in the next 5 years? Please provide concise reason(s):

Open-ended statements were left by 9 of 11 participants to explain their possible future resignations. Specific statements are available in Appendix H. Below is a very generalized overview of this feedback:

- 8 comment on family hardships or relocations.
- 5 comment on a better civilian/DOD job or pay.
- 2 comment on leadership quality.
- 1 comments on spouse employment.
- 1 comments on advancement opportunities.
- 1 comments on educational opportunities.
- 1 comments on equality between designators.
- 1 comments on the lack of career path.

Q11) Please indicate how much money would improve your quality of life, such that you would no longer seriously think about leaving the Navy for the next 5 years.

This question allowed one answer—either no amount of money, or a fill-in-the-blank amount of money. Participants answered as follows:

Answer	Count	%
No amount of money will improve my quality of life enough to influence my decision to leave or stay	5	50
\$50,000	1	10
\$70,000	1	10
\$75,000	1	10
\$100,000	1	10
\$150,000	1	10

Only 50% of those who are considering resigning are willing to stay for additional money. The mean ($N = 5$) for those that gave a monetary amount was \$89,000 over five years, or \$17,800 per year.

Q12) Why are you considering retiring in the next 5 years? Please provide concise reason(s):

Eleven participants left open-ended statements to explain their possible future retirement. Specific statements are available in Appendix I. Below is a very generalized overview of this feedback:

- 7 comment on family hardships or relocations.
- 4 comment on a better civilian/DOD job or pay.
- 3 comment on lack of community direction.
- 2 comment on lack of command/leadership opportunities.
- 1 comments on spouse employment.
- 1 comments on advancement opportunities.
- 1 comments on job satisfaction.

For both Questions 11 and 12, the top two reason participants would leave the community are family hardships or relocations, and pay or a better civilian/DOD job. Aside from these similarities, there are differences between the two groups. The resignation group focused on quality of leadership, career paths, and educational opportunities. The retirement group focused on lack of community direction and command/leadership opportunities.

Q13) Please indicate how much money would improve your quality of life, such that you would no longer seriously think about leaving the Navy for the next 5 years.

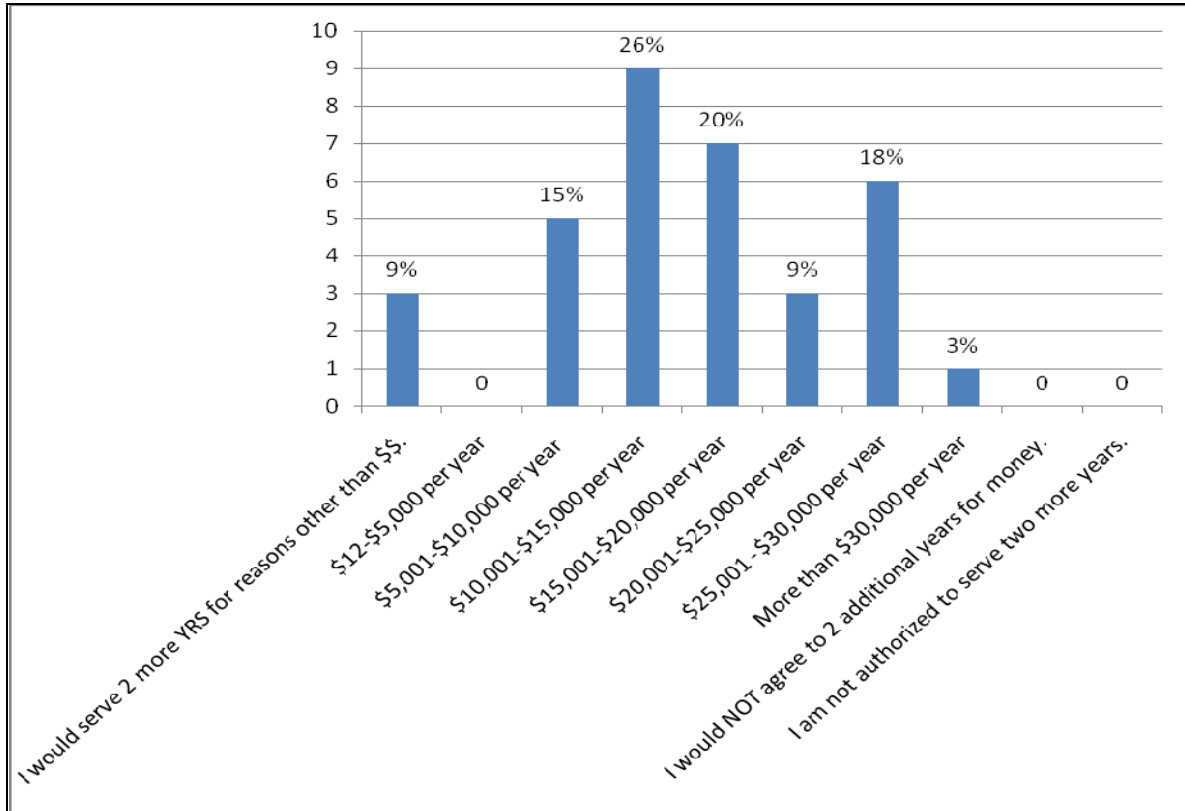
This question allowed one answer—either no amount of money, or a fill in the blank amount of money. Participants answered as follows:

Answer	Count	%
No amount of money will improve my quality of life enough to influence my decision to leave or stay	2	18
\$40,000	1	09
\$45,000	1	09
\$50,000	1	09
\$70,000	1	09
\$75,000	2	18
\$100,000	2	18
\$150,000	1	09

The mean (N = 9) for those that gave a monetary amount was \$78,330 over five years, or \$15,660 per year. It is also interesting to note that 82% of the retirement group would reconsider retirement for an additional amount of money.

Q14) What is the MINIMUM amount of money that you would accept, in return for TWO ADDITIONAL years of obligated service?

Participants answered this question as follows:

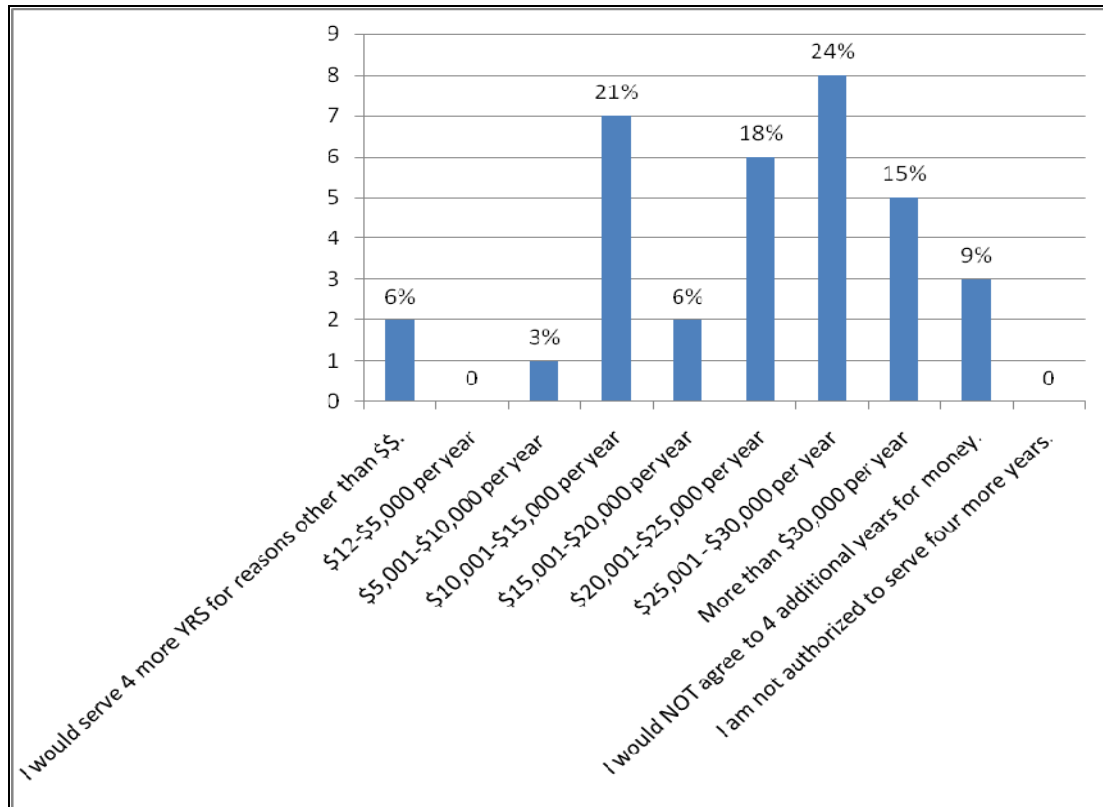


For the purposes of showing complete histogram labels, the responses for Question 14 were shortened. The complete question wording can be found in Appendix C.

As shown, 47% of participants desired between \$10,000 and \$20,000 per year to incur an obligated service of two additional years. To find an overall monetary mean, each participant's choice was given the median for that category (with more than 30K assigned a value of 35K). Overall, the participants who selected a monetary option desired a bonus of \$17,400 per year on average to incur an additional two years of obligated service.

Q15) What is the MINIMUM amount of money that you would accept, in return for FOUR ADDITIONAL years of obligated service?

Participants answered this question as follows:



For the purposes of showing complete histogram labels, the responses for Question 15 were shortened. The complete question wording can be found in Appendix C.

As shown, 42% of participants desired between \$20,000 and \$30,000 per year to incur an obligated service of four additional years. To find an overall monetary mean, each participant's choice was given the median for that category (with more than 30K assigned a value of 35K). Overall, the participants who selected a monetary option desired a bonus of \$22,750 per year to incur an additional four years of obligated service. Of note is the increased number of

participants that desired a bonus of more than \$30,000 per year to incur four more years of service. More than \$30,000 is over the maximum amount allowed by law.

Q16) Assume that a 4 year CSRB of the amount you indicated in the last question is available to you. For example, if you selected \$10,001-\$15,000 for a 4-year commitment in the last question, this would be a total of \$40,000-\$60,000 CSRB paid to you over four years. Please indicate the percentage of your total 4 year CSRB that you would be willing to exchange for a guarantee of each item listed below (rate each item separately).

This question allowed participants to trade their 4-year CSRB for various nonmonetary programs. Participants were allowed to choose a percentage (between 0% and 100%) of their four-year CSRB that they would be willing to give back for various nonmonetary incentives (assuming they are eligible). Overall mean answers are shown in Table 34. Individual incentive responses are available in Appendix J.

Answer	Mean
Homeport/Duty location of your choice AND two tours of geographic stability	23.7%
XO or CO billet of your choice	23.3%
Educational opportunity	15.0%
Homeport/Duty location of your choice	12.5%
Billet type of your choice	11.2%
Geographical stability of two tours	10.7%
Department Head billet of your choice	8.0%
Compressed work week	7.9%
One-year sabbatical	5.8%
Flexible work hours	5.6%

Table 34. Mean Percentage of CSRB that Participants Would Give Back for Nonmonetary Options

Table 34 shows the overall mean percentage that participants were willing to give back for each option. Mean percentages were calculated using the median percentage for each selected answer. For example, a participant who

selected 11%-20% would be assigned a median answer of 15%. Means were not assigned for 0% or 100%. Participants who selected those answers were assigned 0% or 100%, as applicable.

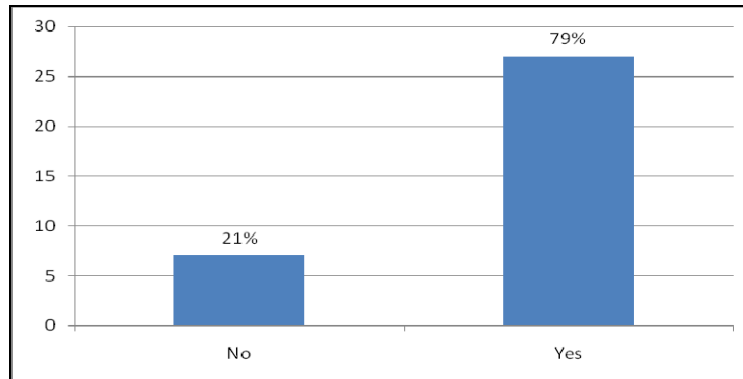
As shown in Table 34, participants responded positively to the idea of choosing a duty location and the detailee(s) assigning the participant two tours of duty in that location. Next was the ability to choose an XO/CO billet of choice (assuming eligibility and availability), followed by educational opportunities. The IW community may be able to use these kinds of questions not only to answer the effectiveness of certain programs, but also to be able assign an IWO-specific numerical value to these programs. This may be useful in deciding whether a program is worthwhile, or more cost effective than a CSRB.

Another part of this question gave participants the ability to create their own options and disclose what percentage of their CSRB they would be willing to give for that option. Four participants used one or two of these options. Specific statements are available at the end of Appendix J. Below is a very generalized overview of these responses, followed by their CSRB percentage value.

- Nondeployable shore duty working within my area of expertise—give 100% back.
- Homeport/Duty location of choice AND two tours of geographic stability, along with no negative promotion consequences—give 61%-70% back.
- Two years to work on Ph.D.—give 41%-50% back.
- One hundred percent Language training at Defense Language Institute (DLI), followed by one year in-country training, followed by 3-year duty related to security issues in this area—give 91%-99% back.
- IA/GSA billet of choice—give 11%-20% back.
- Choice of billet for two tours—give 11%-20% back.

Q17) Have you served as an IW officer in ANY of these locations:

- Washington, D.C. & greater area
- Norfolk, VA & greater area
- San Diego, CA & greater area
- Hawaii
- Fort Gordon, GA

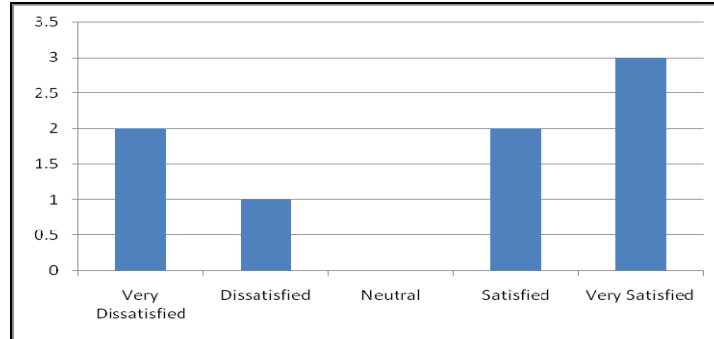


Twenty-seven participants had served in one or more of these locations. These participants answered Questions 18 and 19. Those participants that had not served in these locations skipped to Question 20.

Q18) If you have served as an IW officer in the duty locations below, please indicate your level of satisfaction or dissatisfaction with the AREA/LOCATION as a whole. If you have not lived in any of these locations, please select N/A.

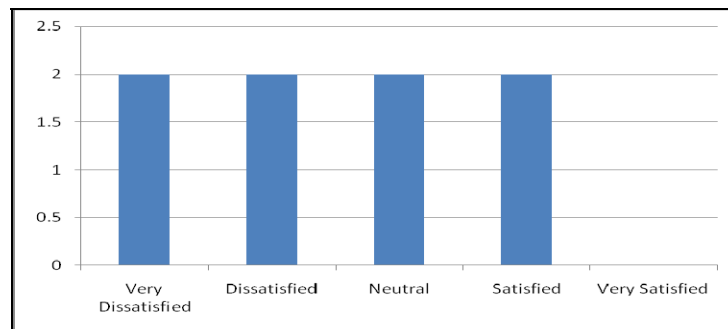
Reported means are given using a scale from 1 (Very Dissatisfied) to 5 (Very Satisfied). In these graphs, percentages are not shown due to the small counts (shown along the Y-axis). Participant answers are broken down by location as follows:

- **Washington, D.C. (Location)**



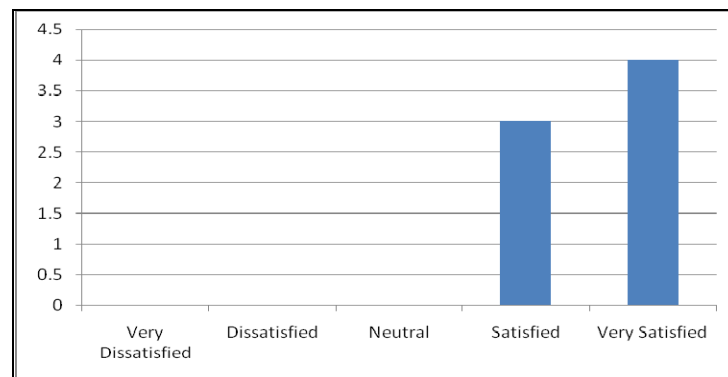
Mean = 3.38

- **Norfolk, VA (Location)**



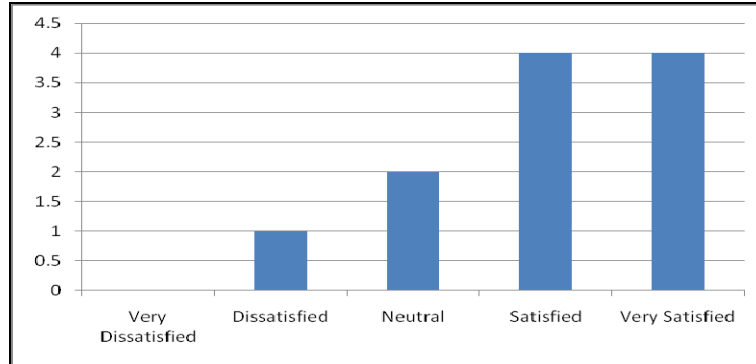
Mean = 2.5

- **San Diego, CA (Location)**



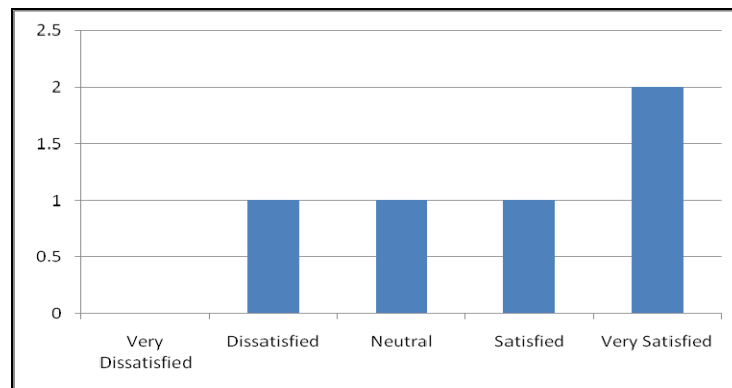
Mean = 4.57

- **Hawaii (Location)**



Mean = 3.63

- **Fort Gordon, GA (Location)**



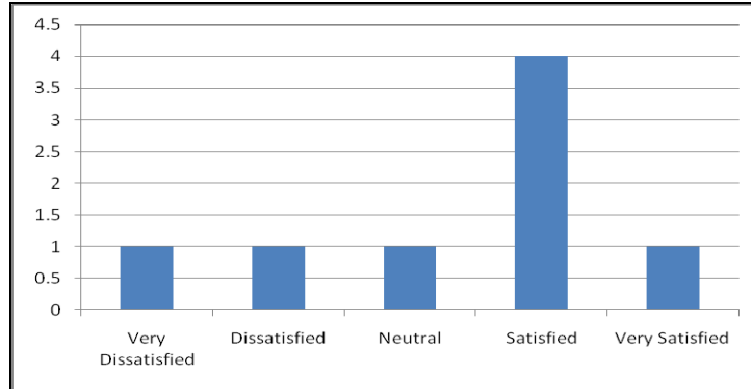
Mean = 3.8

The overall means for Question 18 are shown in Table 35.

Q19) If you have served as an IW officer in any of the duty locations below, please indicate your level of satisfaction or dissatisfaction with the COMMAND you worked for. If you have not served as an IW officer in these locations, please select N/A.

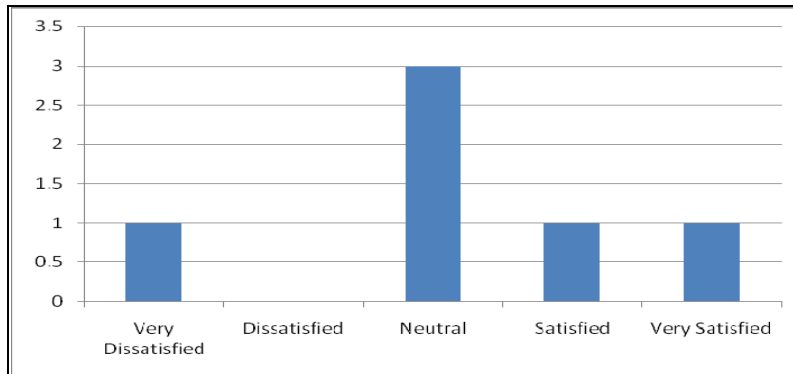
Reported means are given using a scale from 1 (Very Dissatisfied) to 5 (Very Satisfied) similar to Question 18. Like the last set of graphs, percentages are not shown due to the small N or counts shown along the Y-axis. Participant answers are broken down by location as follows:

- **Washington, D.C. (Command)**



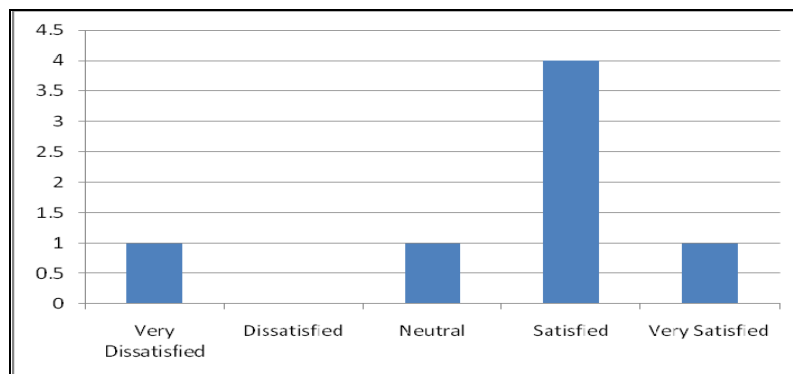
Mean = 3.38

- **Norfolk, VA (Command)**



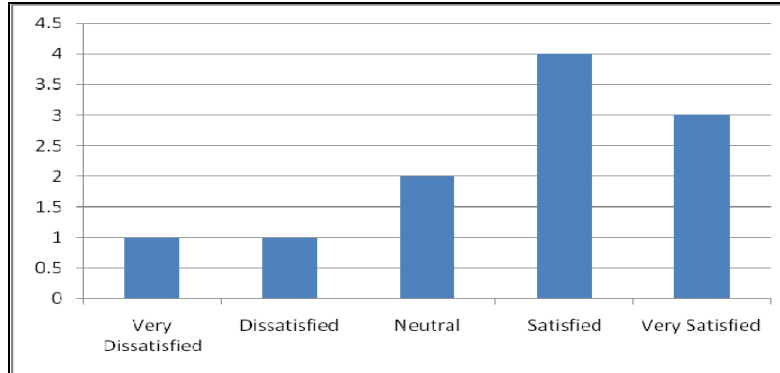
Mean = 3.16

- **San Diego, CA (Command)**



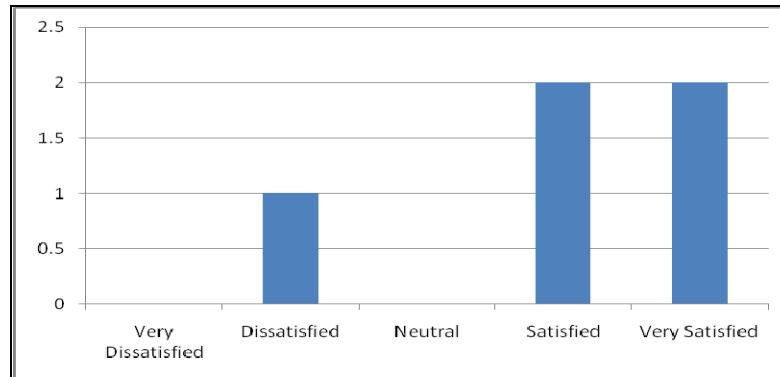
Mean = 3.57

- **Hawaii (Command)**



Mean = 3.27

- **Fort Gordon, GA (Command)**



Mean = 4.00

Location	Location Mean (Likert Scale of 1-5)	Command Mean (Likert Scale of 1-5)
Washington, D.C. & greater area	3.38	3.38
Norfolk, VA & greater area	2.5	3.16
San Diego, CA & greater area	4.57	3.57
Hawaii	3.63	3.27
Fort Gordon, GA	3.8	4.0

Table 35. Mean Likert Scores of IW General Locations and Commands

As shown in Table 35, the Norfolk, VA and greater area score the lowest in satisfaction of both commands and location. While the count or *N* for these questions is very low, this type of question may prove useful to the IW community in future surveys.

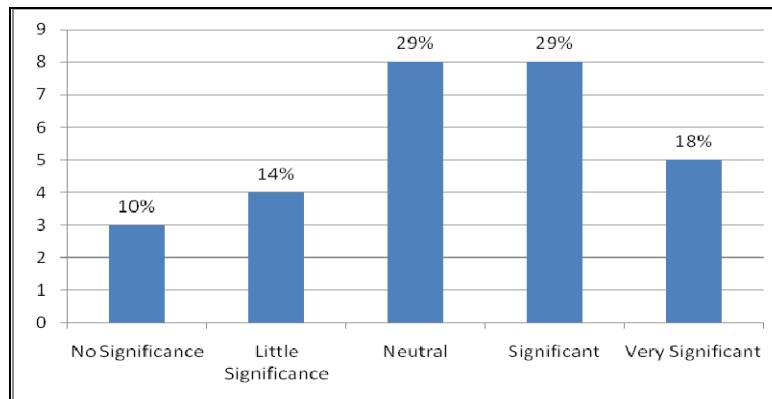
Q20) What region do you consider home (i.e., where you are from, or where you consider home, other than your current residence)?

Those participants who selected a region answered Question 21. Those participants who did not select a region skipped to Question 22.

Answer	Count	Percent
Northeastern (ME, NH, VT, MA, RI, CT)	2	6%
Middle Atlantic (NY, NJ, PA, WV, VA, MD, DC, DE)	5	15%
North Central (OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS)	4	12%
South (NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX)	8	24%
West (MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA)	9	24%
Alaska (AK)	0	0%
Hawaii (HI)	0	0%
I don't really have one	6	18%
Other U.S. territory or country outside the U.S. (please specify below)	0	0%

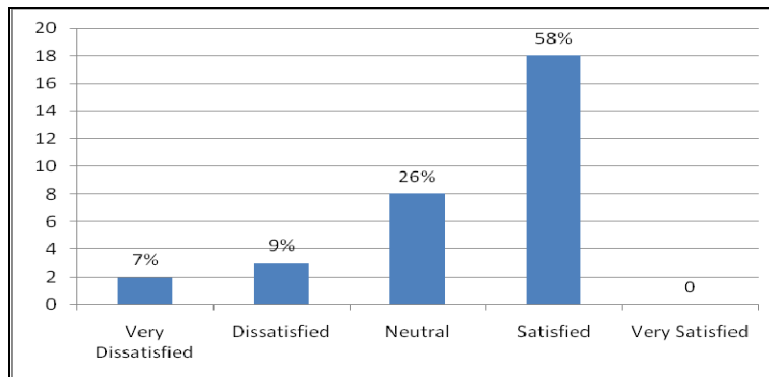
Q21) How significant is being stationed close to this location to you?

Reported means are given using a scale from 1 (No Significance) to 5 (Very Significant).



Mean = 3.29

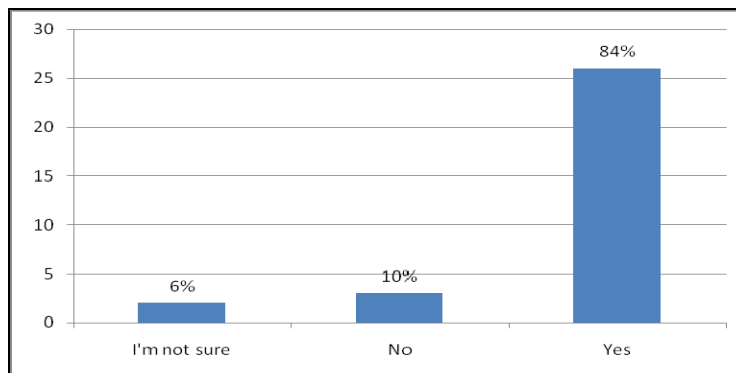
Q22) Overall, please rate your level of satisfaction or dissatisfaction with the time you have to spend with your immediate family while being a part of the IW community.



Mean = 3.36

Question 22 shows that the participants were on average between Neutral and Satisfied with the time they have had to spend with their family. While this may seem contrary to some of the open-ended comments, consider that no one answered Very Satisfied, and 42% answered either neutral or below.

Q23) Do you think that a comparable civilian equivalent job would allow you to spend more time with your family?



Question 23 shows some of the attractiveness of civilian employment as it relates to family life. This is reinforced by many open-ended comments throughout this survey.

Q24) Do you have any other monetary or nonmonetary solutions that may help the IW community improve retention?

This was one of two open-ended questions toward the end of the survey. Nineteen participants gave quality responses. Specific statements are available in Appendix I. Reading individual responses is highly encouraged by the author. However, a generalized overview of this feedback is shown below:

Additional Monetary Solutions

- 1 comments that CSRB is attractive, especially to pay for children going to college.

Additional Nonmonetary Solutions

- 10 comment on improving IW training, specifically:
 - Give specific IW area of expertise training (5)
 - Improve training process in general (4)
 - Educate community via distance learning (1).
- 4 comment on improving community direction.
- 3 comment on improving quality of life, especially as it relates to relocation and family.
- 2 comment on the establishment of an advancement/career path.
- 2 comment on improving IW leadership.
- 2 comment on improving overall job satisfaction.
- 1 comments on improving IW culture.
- 1 comments on increasing educational opportunities.
- 1 comments on improving the overall treatment of personnel.
- 1 comments on matching Thrift Savings Plan contributions.

Q24) Is there anything else that you would like see added or discussed in this survey?

This is the second open-ended question to end the survey. Eight participants answered as shown below:

- Such a survey should not be limited to students here at NPS. This group is a subset of the community that is obligated with a 3-year tour following NPS graduation. As such, it cannot accurately represent the community as a whole.
- Better and more systematic IW related training throughout the career.
- Recommendations on career paths, i.e., operational assignments verses national assignments...Tactical collection vs. National collection...computer related fields vs. signal processing vs. traffic analysis?
- Recommendations to improve our qualifications...not just as junior officers, but also throughout our career.
- You might as well bring up the discussion of community information flow through venues such as Facebook, Information Warriors, and the NPC Community Mgr/Detailer page. There should be an authoritative running dialogue on where our community is going, not just rumors.
- A BONUS for specific jobs—like AIP for enlisted Sailors.
- Yes. There should be an investigation of attitudes toward community mergers.
- It is kind of funny that the questions touched on pretty much everything except job satisfaction as a criterion for staying in.
- Expansion on leadership opportunities (to include command at sea). Alternation of promotion flows (merit vice time based). Merger and consolidation with 1630 and/or 1600 communities. Current posture where community (under NETWAR) is postured

under a “babysitter” URL who (prior to being placed in charge) understands neither the mission or techniques to accomplish.

E. DISCUSSION OF SURVEY RESULTS

1. Discussion

While this survey had a high response rate, it represents only a small portion (3.5%) of the community. The respondent population has more men, with slightly more experience than the overall IW community. Additionally, all participants were attending graduate school. Other than these concerns, the participants were otherwise representative of their peers. However, the overall opinions of the IW community may differ substantially since these participants were not a random sample from the IW community.

Overall, personnel are between neutral and satisfied with the IW community. Eighty-two percent of the population believes there are IW retention issues. The top negative community factors are civilian career opportunities, pay, IW leadership, family quality of life, and community direction. When it comes to individual decision making, personnel think IW leadership, job advancement, education and training opportunities, pay, and civilian career opportunities are the most significant.

Fifty-eight percent of the personnel stated they were considering retirement or resignation in the next five years. Reasons for leaving the IW community centered on family quality of life, civilian career opportunities, pay, IW leadership, and community direction. Eighty-eight percent of the respondents thought a CSRB would be helpful. Additionally, these personnel thought highly of several nonmonetary programs. These included a guarantee of homeport location of choice AND two tours in that location, XO/CO billet of choice, educational opportunities, and homeport/duty location of choice.

Personnel believe they can earn an average of about \$25,000 more annually in a civilian equivalent job; however, they are willing to stay for less than that amount per year. Overall, those who were resigning desired \$17,800 per

year to stay, while those who were retiring desired \$15,660 per year to stay. Personnel desired an average of \$17,400 per year for two years of obligated service. While this option had a lower take rate, personnel desired \$22,750 per year for four years obligated service.

Based on these mean survey results, it is suggested that a CSRB between \$15,000 and \$20,000 per year would be an effective amount for a 2-year obligation. However, this does not represent the take-rate behavior of officers of a certain rank; rather, it shows the take-rate behavior of all survey participants. If a specific rank and experience is identified, then the take-rate behavior of officers within that category should be used to identify the best CSRB solution. In addition, if the CSRB obligation changes, the take-rate behavior may also change, and a different CSRB amount should be computed.

2. Recommendations

This survey should be sent to personnel whom the IW community would like to retain. There are, however, several areas in which the survey could be improved. First, there should be a demographic question added concerning race and ethnicity. Secondly, there should be a question that identifies overall YOS. Thirdly, factors within each question should be analyzed carefully, and updated as necessary. Lastly, nonmonetary factors or programs should be adjusted to reflect actual and realistic programs that the IW community would be willing to consider.

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VII. CONCLUSION

A. OVERVIEW

This chapter provides overall conclusions. Sections B, C, D, and E summarize the CBA findings and solutions. Section F gives thesis conclusions and recommendations to the IW community. Section G provides recommendations for future research.

B. FAA REVISITED

The area analysis of CSRBs, retention, and the IW community showed that:

- The Navy supports CSRBs when they are cost-effective.
- There are many types of monetary and nonmonetary retention issues and solutions.
- Flexibility in retention choices will retain more personnel.
- Forty-four percent of the IW community is prior enlisted. This number is high, considering that annually between 25% and 35% of newly-accessed acquired? Naval officers are prior enlisted.
- While prior enlisted retention to O-4 should be high, there are many reasons why retention past the grade of O-4 may be lower.
- While IW O-5 manning is currently low, future manning at O-4 is also a concern.

C. FNA REVISITED

The IW retention needs analysis identified historical IW retention issues and the difference in pay between a Navy IW and civilian equivalent job. The needs analysis found that:

- Historical O-4 retention is the lowest of all IW pay grades at 36.6%, mainly due to the number of prior enlisted officers leaving the community at this time.

- Historical O-5 retention is also low at 37.9%.
- There are several other retention areas involving prior enlisted status, rank, and SoC that should be reviewed and improved as needed.
- An IW O-4 at 18 or more YOS earns on average about \$12,700 less annually than his or her civilian counterpart's 75th-percentile wage.
- An IW O-5 with 20 or more YOS earns slightly more than his or her civilian counterpart's 75th-percentile wage.

D. FSA REVISITED

There are many types of retention solutions. While a CSRB for IWOs in certain pay grades and YOS may increase retention in the short term, other retention solutions may also be beneficial. These include, but are not limited to, geographical stability, flexible work arrangements, and leadership or educational opportunities.

E. SOLUTION EFFECTIVENESS REVISITED

While a Navy-wide IW survey is recommended, NPS participants showed that:

- Overall, the top negative IW community retention factors (in order of importance) are viewed by participants as: civilian career opportunities, pay, IW leadership, family quality of life, and community direction.
- Overall, the top negative personal retention factors (in order of importance) are IW leadership, job advancement, education and training opportunities, pay, and career opportunities.
- Of those who were considering leaving the community, the top reasons (in order of importance) were family quality of life, civilian career opportunities, pay, IW leadership, and community direction.

- Overall, personnel believe they can earn \$25,100 more annually in a civilian job, and 88% think a CSRB will be helpful.
- Overall, personnel will remain in the community for less than that amount per year.

F. OVERALL CONCLUSIONS

In conclusion, the data show there is a need for improvement in IW retention. The highest priority should be to ensure future retention at the pay grade of O-4. Secondary priorities concern retention at the pay grade of O-5 and the differences in retention between prior enlisted status, rank, and SoC.

Recommended solutions include the implementation of both monetary and nonmonetary programs. While nonmonetary programs are most likely the best solution for the long term, a monetary CSRB may provide a short-term solution. All solutions should have a clear goal of improving IWO moral, while providing more reasons for these officers to remain a part of the IW community.

It is the author's conclusion that the manning issues at the grade of O-5 are a direct result of too many prior enlisted officers who are not willing to stay in past retirement eligibility at the O-4 pay grade. This may be due, in part, to a perceived lack of community direction, leadership, and leadership opportunities.

Before implementing any solution, the IW community should first find out the IWO take-rate behavior for all identified solutions. This is most easily done via a survey of those officers identified above. If the CSRB take-rate behavior is acceptable, cost effective, and meets the needs of the IW community, then the implementation of an annual CSRB is suggested.

Ideally, a strategically-placed CSRB at the grade of O-4 will ensure higher retention and increase the pool of officers eligible for O-5. Once these officers advance to the grade of O-5, it is expected that many will remain in that rank for at least three years to maximize retirement benefits. This should also help increase retention at the O-5 pay grade.

This CSRB should be dependent upon IW community needs and perceived fairness. Based upon this research, the author recommends a two-year CSRB for those in the O-4 pay grade between 20 and 22 YOS. The CSRB amount should be dependent upon survey results, along with the differences in pay between these IWOs and the civilian sector.

Survey data show that nonmonetary retention solutions should include a plan to identify, communicate, and implement an IW community direction, focusing on specific IW areas of expertise, training programs, and improving IW leadership and leadership opportunities. This, combined with a strategic CSRB, should help increase retention in all pay grades.

G. RECOMMENDATIONS FOR FUTURE RESEARCH

The issue of military retention is very complex. However, the complexity of prior enlisted officer retention is often overlooked. These officers provide valuable experience and improved retention in pay grades O-3 and below. However, retention of these officers past the grade of O-4 can be a challenge. While this thesis focused on recommendations for the IW community, other communities may face similar retention problems.

This thesis noted an increase in the number of newly-acquired prior enlisted officers Navy-wide since FY06. If we continue to decrease the number of officers Navy-wide, while keeping the number of officers in our prior enlisted programs the same, these trends are likely to continue, especially in RL communities.

Additionally, the retention survey created for the IW community may provide a helpful tool to identify retention issues in other communities. Such surveys can provide invaluable feedback to community leaders.

It is also recommended that Navy RL communities pay attention to the retirement eligibility of prior enlisted officers. This may change the manner in which they are often viewed. When faced with poor family quality of life, higher civilian pay, poor leadership, etc., these officers may choose to retire before reaching pay grades O-4 or O-5 as an officer. A non-prior enlisted officer at the

same pay grade (O-3 or O-4) is not normally eligible for retirement, and may be more likely to stay in the service than a prior enlisted officer. Future research in this area would be useful to both the Navy and many RL communities.

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APPENDIX A. DESIGNATOR END-STRENGTH BY RANK FOR FYS92-02

ENSIGN (O-1)																
Inv Year//Desig>>	110	110G	111N	111C	111	112N	112	116	130	131	132	137	139	120	14X	
Inv end Sep-92	0	363	0	2	27	0	0	1,739	1	227	81	731	1,267	0	3	
Inv end Sep-93	0	343	1	25	26	0	0	1,457	0	161	23	575	1,189	0	0	
Inv end Sep-94	0	239	2	23	25	1	1	1,410	0	37	26	403	1,003	0	1	
Inv end Sep-95	0	26	2	41	43	0	0	1,520	1	17	11	412	950	0	0	
Inv end Sep-96	0	11	3	30	33	0	0	1,636	0	15	19	577	1,238	0	0	
Inv end Sep-97	0	10	1	33	34	1	2	1,535	72	7	48	589	1,303	0	0	
Inv end Sep-98	0	14	4	41	45	0	0	1,460	32	17	44	545	1,346	0	0	
Inv end Sep-99	14	0	6	44	50	0	0	1,580	65	23	44	509	1,228	0	0	
Inv end Sep-00	85	0	1	34	35	0	0	1,826	56	29	61	565	1,268	0	0	
Inv end Sep-01	106	0	0	51	51	0	0	1,834	102	111	131	517	1,277	0	0	
Inv end Sep-02	3	0	1	60	61	0	0	1,763	132	145	100	561	1,303	102	1	
Inv Year//Desig>>	151	152	160	161	163	165	170	180	310	510	URL	RL	STAF	LDO	RSL	
Inv end Sep-92	0	25	0	68	95	4	0	13	396	154	5,372	208	1,675	401	2,284	
Inv end Sep-93	0	30	0	63	95	4	0	13	404	158	4,608	206	1,685	463	2,354	
Inv end Sep-94	0	50	0	74	128	4	0	25	468	169	3,902	283	1,623	594	2,500	
Inv end Sep-95	0	46	0	73	151	4	97	29	480	181	3,669	401	1,704	551	2,656	
Inv end Sep-96	0	39	0	54	153	10	98	15	342	166	4,199	369	1,468	488	2,325	
Inv end Sep-97	0	43	0	73	185	9	99	3	194	155	4,258	412	1,205	493	2,110	
Inv end Sep-98	0	43	0	71	153	9	90	6	251	132	4,158	372	1,139	466	1,977	
Inv end Sep-99	0	56	0	84	136	9	85	9	302	122	4,215	379	1,198	665	2,242	
Inv end Sep-00	0	50	0	93	148	4	13	13	401	158	4,698	321	1,355	777	2,453	
Inv end Sep-01	0	59	0	96	173	4	0	20	426	180	5,033	352	1,444	795	2,591	
Inv end Sep-02	0	61	2	105	195	4	0	14	341	181	5,016	484	1,325	757	2,566	

Table 108. Pay Grade O-1 Designator End Strength between 1992 and 2002

Source: N131

LTJg (O-2)																
Inv Year//Desig>>	110	110G	111N	111C	111	112N	112C	112	116	130	131	132	137	139	120	14X
Inv end Sep-92	0	443	52	1,070	1,122	327	2	329	1,094	19	1,377	787	107	565	0	4
Inv end Sep-93	0	407	35	945	980	283	0	283	911	4	1,087	694	122	549	0	7
Inv end Sep-94	0	343	37	811	848	356	0	356	788	7	681	513	176	696	0	6
Inv end Sep-95	0	16	50	709	759	378	3	381	766	11	639	358	184	685	0	0
Inv end Sep-96	0	12	80	747	827	249	0	249	622	8	491	278	103	468	0	1
Inv end Sep-97	0	12	88	846	934	281	2	283	627	36	567	303	67	326	0	0
Inv end Sep-98	0	36	94	913	1,007	235	11	246	598	66	668	433	94	411	0	5
Inv end Sep-99	59	0	100	900	1,000	243	0	243	471	81	773	452	134	424	0	3
Inv end Sep-00	92	0	118	920	1,038	201	1	202	461	108	832	384	132	318	0	6
Inv end Sep-01	87	0	111	1,022	1,133	195	17	212	512	102	969	452	27	131	0	12
Inv end Sep-02	0	0	81	1,202	1,283	216	1	217	526	149	998	493	69	144	109	9
Inv Year//Desig>>	151	152	160	161	163	165	170	180	310	510	URL	RL	STAF	LDO	RSL	
Inv end Sep-92		75	0	112	214	3	0	34	621	207	6,698	442	1,690	740	2,872	
Inv end Sep-93		54	0	102	159	6	0	26	473	197	5,816	354	1,574	734	2,662	
Inv end Sep-94		44	0	74	115	7	0	27	462	175	4,990	273	1,699	623	2,595	
Inv end Sep-95		48	0	73	130	8	299	26	467	182	4,260	584	1,739	620	2,943	
Inv end Sep-96		50	0	91	151	12	191	37	499	189	3,501	533	1,615	668	2,816	
Inv end Sep-97		58	0	103	167	10	123	32	480	195	3,570	493	1,666	699	2,858	
Inv end Sep-98		69	0	96	193	17	116	27	359	186	3,964	523	1,567	609	2,699	
Inv end Sep-99		72	0	85	208	12	101	29	238	176	4,026	510	1,342	543	2,395	
Inv end Sep-00		77	0	87	196	11	0	31	325	171	4,015	408	1,368	559	2,335	
Inv end Sep-01		64	0	105	169	12	1	22	406	169	4,111	385	1,387	776	2,548	
Inv end Sep-02		62	8	108	184	10	0	34	484	185	4,435	524	1,498	883	2,905	

Table 109. Pay Grade O-2 Designator End Strength between 1992 and 2002

Source: N131

LT (O-3)																
Inv Year//Desig>>	110	110G	111N	111C	111	112N	112C	112	116	130	131	132	137	139	120	14X
Inv end Sep-92	0	858	282	3,066	3,348	1,213	82	1,295	94	68	4,328	2,437	14	46	0	314
Inv end Sep-93	0	783	281	2,883	3,164	1,287	77	1,364	97	46	4,558	2,380	12	30	0	262
Inv end Sep-94	0	696	280	2,556	2,836	1,320	49	1,369	79	45	4,591	2,221	12	54	0	270
Inv end Sep-95	0	9	268	2,347	2,615	1,254	28	1,282	91	46	4,279	2,035	15	27	0	240
Inv end Sep-96	0	15	271	2,212	2,483	1,252	16	1,268	93	47	4,153	1,975	20	58	0	217
Inv end Sep-97	0	29	299	2,201	2,500	1,172	21	1,193	77	65	3,938	1,842	21	69	0	175
Inv end Sep-98	0	28	293	2,040	2,333	1,018	31	1,049	52	64	3,473	1,567	29	91	0	174
Inv end Sep-99	45	0	264	1,874	2,138	962	16	978	44	62	3,041	1,386	26	73	0	163
Inv end Sep-00	390	0	236	1,862	2,098	858	13	871	99	73	3,002	1,376	25	57	0	145
Inv end Sep-01	268	0	251	1,819	2,070	800	12	812	94	82	2,974	1,343	15	35	0	142
Inv end Sep-02	17	0	246	1,878	2,124	825	23	848	90	89	2,968	1,272	13	42	118	153
Inv Year//Desig>>	151	152	160	161	163	165	170	180	310	510	URL	RL	STAF	LDO	RSL	
Inv end Sep-92	14	221	0	230	369	82	0	138	1,154	570	12,940	1,386	7,164	1,873	10,423	
Inv end Sep-93	16	221	0	230	406	73	0	142	1,188	557	12,876	1,356	7,261	1,824	10,441	
Inv end Sep-94	11	206	0	256	442	78	0	152	1,137	552	12,280	1,417	6,940	1,777	10,134	
Inv end Sep-95	6	180	0	250	402	77	635	137	1,091	466	10,764	1,927	6,696	1,667	10,290	
Inv end Sep-96	5	146	0	241	391	63	682	121	993	476	10,445	1,866	6,565	1,671	10,102	
Inv end Sep-97	9	132	0	254	391	60	694	108	1,000	500	10,073	1,823	6,508	1,583	9,914	
Inv end Sep-98	12	130	0	259	366	66	621	109	928	490	8,989	1,737	6,493	1,661	9,891	
Inv end Sep-99	9	124	0	260	360	64	537	117	871	442	8,082	1,634	6,543	1,612	9,789	
Inv end Sep-00	4	138	0	252	347	71	0	104	746	390	8,285	1,061	6,364	1,616	9,041	
Inv end Sep-01	0	141	0	214	376	68	0	89	682	383	7,984	1,030	6,285	1,496	8,811	
Inv end Sep-02	0	144	62	232	381	67	0	94	658	403	7,771	1,251	6,241	1,470	8,962	

Table 110. Pay Grade O-3 Designator End Strength between 1992 and 2002

Source: N131

LCDR (O-4)																
Inv Year//Desig>>	110	110G	111N	111C	111	112N	112C	112	116	130	131	132	137	139	120	14X
Inv end Sep-92	0	702	122	1,580	1,702	596	186	782	1	20	1,517	1,245	0	0	0	384
Inv end Sep-93	0	680	124	1,515	1,639	585	201	786	2	21	1,453	1,195	0	1	0	399
Inv end Sep-94	0	577	122	1,214	1,336	534	188	722	0	19	1,187	917	0	0	0	351
Inv end Sep-95	0	3	127	1,221	1,348	499	202	701	1	16	1,291	95	0	0	0	341
Inv end Sep-96	0	2	125	1,152	1,277	463	200	663	0	8	1,389	868	0	0	0	321
Inv end Sep-97	0	1	131	1,060	1,191	498	173	671	0	3	1,465	842	0	0	0	324
Inv end Sep-98	0	1	124	1,025	1,149	499	157	656	1	4	1,465	856	0	0	0	331
Inv end Sep-99	2	0	122	932	1,054	471	133	604	0	2	1,477	26	0	0	0	342
Inv end Sep-00	461	0	113	912	1,025	435	168	603	0	4	1,472	830	0	0	0	341
Inv end Sep-01	427	0	113	929	1,042	467	165	632	0	5	1,416	82	0	0	0	324
Inv end Sep-02	135	0	120	918	1,038	467	139	606	0	8	1,364	887	0	0	144	291
Inv Year//Desig>>	151	152	160	161	163	165	170	180	310	510	URL	RL	STAF	LDO	RSL	
Inv end Sep-92	146	154	0	174	306	63	0	142	791	302	6,177	1,426	4,837	934	7,197	
Inv end Sep-93	134	152	0	177	310	58	0	138	760	289	5,986	1,411	4,582	850	6,843	
Inv end Sep-94	113	135	0	160	284	41	0	117	623	266	4,938	1,225	4,232	827	6,284	
Inv end Sep-95	120	130	0	175	316	48	525	128	636	309	4,428	1,800	4,151	819	6,770	
Inv end Sep-96	115	136	0	180	309	57	504	139	622	283	4,383	1,770	4,112	802	6,684	
Inv end Sep-97	111	140	0	174	292	58	478	140	606	268	4,327	1,722	4,080	754	6,556	
Inv end Sep-98	116	139	0	178	320	53	501	150	599	262	4,278	1,790	3,854	688	6,332	
Inv end Sep-99	120	133	0	172	317	49	467	144	525	268	4,109	1,745	3,778	693	6,216	
Inv end Sep-00	121	129	0	169	326	52	0	141	517	268	4,543	1,280	3,809	718	5,807	
Inv end Sep-01	116	130	0	185	319	53	0	143	508	268	4,547	1,270	3,904	791	5,965	
Inv end Sep-02	110	120	148	183	318	52	0	137	520	271	4,190	1,503	3,945	804	6,252	

Table 111. Pay Grade O-4 Designator End Strength between 1992 and 2002

Source: N131

CDR (O-5)																	
Inv Year//Desig>>	110	110G	111N	111C	111	112N	112C	112	116	117	130	131	132	137	139	120	14X
Inv end Sep-92	0	266	75	1,038	1,113	392	73	465	0	0	9	1,165	711	0	0	0	300
Inv end Sep-93	0	294	76	949	1,025	373	106	479	0	0	7	1,102	675	0	0	0	297
Inv end Sep-94	0	282	78	901	979	363	117	480	0	0	3	990	596	0	0	0	264
Inv end Sep-95	0	1	90	849	939	368	129	497	0	0	2	894	585	0	0	0	246
Inv end Sep-96	0	0	85	865	950	360	134	494	0	0	3	864	588	0	0	0	245
Inv end Sep-97	0	0	83	836	919	339	135	474	0	0	3	878	580	0	0	0	248
Inv end Sep-98	0	0	82	912	994	355	137	492	0	0	2	953	657	0	0	0	237
Inv end Sep-99	4	0	96	940	1,036	387	135	522	0	0	3	952	661	0	0	0	234
Inv end Sep-00	285	0	89	888	977	373	108	481	0	0	1	923	673	0	0	0	230
Inv end Sep-01	311	0	75	878	953	333	126	459	0	0	0	962	683	0	0	0	222
Inv end Sep-02	103	0	69	850	919	335	103	438	0	0	0	986	667	0	0	96	230
Inv Year//Desig>>	151	152	160	161	163	165	170	180	310	510	URL	RL	STAF	LDO	RSL		
Inv end Sep-92	150	89	0	97	168	40	0	69	568	186	3,925	941	2,680	233	3,854		
Inv end Sep-93	155	86	0	99	167	44	0	75	559	172	3,729	950	2,716	220	3,886		
Inv end Sep-94	150	82	0	98	168	41	0	74	482	169	3,455	898	2,686	230	3,814		
Inv end Sep-95	153	82	0	99	172	40	290	75	448	166	3,031	1,178	2,648	215	4,041		
Inv end Sep-96	150	85	0	99	174	35	339	79	463	178	3,010	1,226	2,688	216	4,130		
Inv end Sep-97	138	87	0	93	176	32	373	84	461	177	2,972	1,249	2,732	199	4,180		
Inv end Sep-98	119	83	0	92	179	32	366	80	462	176	3,215	1,203	2,796	184	4,183		
Inv end Sep-99	127	84	0	93	166	34	283	83	420	169	3,306	1,114	2,636	187	3,937		
Inv end Sep-00	134	83	0	95	169	35	0	83	422	162	3,459	837	2,532	180	3,549		
Inv end Sep-01	133	84	0	106	163	35	0	82	415	176	3,495	831	2,507	187	3,525		
Inv end Sep-02	131	88	86	110	175	37	0	78	437	176	3,243	1,035	2,543	223	3,801		

Table 112. Pay Grade O-5 Designator End Strength between 1992 and 2002

Source: N131

CAPT (O-6)																
Inv Year//Desig>>	110	110G	111N	111C	111	112N	112C	112	130	131	132	137	139	120	14X	
Inv end Sep-92	0	44	35	493	528	226	16	242	0	564	170	0	0	0	138	
Inv end Sep-93	0	47	34	525	559	236	12	248	0	546	165	0	0	0	139	
Inv end Sep-94	0	47	37	475	512	223	6	229	0	494	154	0	0	0	130	
Inv end Sep-95	0	1	38	454	492	232	8	240	0	521	156	0	0	0	122	
Inv end Sep-96	0	0	38	432	470	232	9	241	0	491	174	0	0	0	124	
Inv end Sep-97	0	0	41	444	485	256	10	266	0	489	187	0	0	0	120	
Inv end Sep-98	0	0	51	437	488	277	5	282	0	466	196	0	0	0	111	
Inv end Sep-99	1	0	52	424	476	282	3	285	0	445	202	0	0	0	111	
Inv end Sep-00	101	0	62	451	513	301	5	306	1	445	211	0	0	0	118	
Inv end Sep-01	98	0	59	422	481	280	5	285	1	400	221	0	0	0	120	
Inv end Sep-02	55	0	59	416	475	264	5	269	1	391	244	0	0	23	115	
Inv Year//Desig>>	150	151	152	160	161	163	165	170	180	310	510	URL	RL	STAF	LDO	RSL
Inv end Sep-92	67	20	12	0	39	72	14	0	29	224	96	1,756	391	1,444	24	1,859
Inv end Sep-93	67	21	12	0	43	74	15	0	27	214	90	1,776	398	1,410	19	1,827
Inv end Sep-94	67	22	13	0	45	73	16	0	29	191	89	1,617	395	1,413	25	1,833
Inv end Sep-95	64	21	8	0	40	77	17	64	31	178	84	1,458	444	1,354	24	1,822
Inv end Sep-96	60	23	9	0	40	75	24	80	30	180	92	1,426	465	1,376	24	1,865
Inv end Sep-97	59	24	9	0	39	72	24	78	28	184	95	1,475	453	1,385	21	1,859
Inv end Sep-98	48	35	11	0	41	72	24	78	23	175	83	1,485	443	1,392	19	1,854
Inv end Sep-99	56	19	11	0	34	68	22	92	24	164	83	1,458	437	1,387	22	1,846
Inv end Sep-00	52	17	14	0	38	70	16	1	29	165	83	1,631	355	1,440	25	1,820
Inv end Sep-01	48	18	15	0	38	80	15	0	32	174	91	1,546	366	1,465	23	1,854
Inv end Sep-02	55	20	9	24	39	84	19	0	32	177	86	1,496	420	1,502	27	1,949

Table 113. Pay Grade O-6 Designator End Strength between 1992 and 2002

Source: N131

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APPENDIX B. IW PERSONNEL TEMPO DESCRIPTION

*PERSONNEL OPERATIONAL TEMPO	IN**	OUT***	TOTAL	IN**	OUT***
ASHORE	400	504	904	73.8%	83.6%
AFLOAT	142	88	230	26.2%	14.6%
UNKNOWN	0	11	11	0.0%	1.8%
TOTAL	542	603	1,145	100.0%	100.0%

OPERATIONAL	144	90	234	26.6%	14.9%
NONOPERATIONAL	398	502	900	73.4%	83.3%
UNKNOWN	0	11	11	0.0%	1.8%
TOTAL	542	603	1,145	100.0%	100.0%

DEPLOYED	31	13	44	25.0%	21.3%
SEPARATED	93	37	130	75.0%	60.7%
UNKNOWN	0	11	11	0.0%	18.0%
TOTAL	124	61	185	100.0%	100.0%

FAMILY	422	480	902	77.9%	79.6%
NO FAMILY	120	112	232	22.1%	18.6%
UNKNOWN	0	11	11	0.0%	1.8%
TOTAL	542	603	1,145	100.0%	100.0%

FAMILY & DEPLOYED OR SEPARATED	75	27	102	17.8%	5.6%
FAMILY & NOT DEPLOYED OR SEPARATED	347	453	800	82.2%	94.4%
TOTAL	422	480	902	100.0%	100.0%

*This table represents the last known personnel operational tempo before they left the IW community or when the data ended in September 2007. In other words, this shows that when personnel left the community, they tended to be more in a nonoperational status. Those personnel who stayed in the community tended to be more in an operational status as of September 2007.

**In refers to those personnel who remained in the IW community.

***Out refers to those personnel who left the IW community.

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APPENDIX C. IW RETENTION SURVEY INSTRUMENT

Below is the IW retention survey instrument as seen by the participants. It is important to note that SurveyMonkey provides a skip logic option for survey questions. For example, on page 1, if the participant answered no, they moved to the second page. However, if the participant answered yes, they moved to the first set of questions on page 3. Page numbers are shown at the bottom right. Another example includes the question about resigning or retiring on page 10. If participants selected they were seriously considering resigning in the next five years, they only answered the follow-up questions pertaining to resigning. If they selected they were considering retiring, they only answered the follow-up questions pertaining to retiring. If they answered that they were not considering retiring or resigning, they skipped those questions pertaining to resigning and retiring and moved on to the next applicable question.

Information Warfare (IW) Retention Survey

Introduction

Information Warfare (IW) Retention Survey

Introduction:

You are invited to participate in a survey of Naval Postgraduate School (NPS) Information Warfare Officers (IWOs). This is a survey for IWOs currently taking NPS classes on campus, or through Distributed Learning (DL).

Procedures:

The purpose of this survey is to assess factors that affect the retention of IWOs. If you choose to participate, you will be asked for your opinion on multiple retention factors, and your demographic information. This survey should take approximately 20 minutes.

Risks:

This survey involves minimal risk. All precautions will be taken in accordance with the below section on confidentiality. However, there is a slight risk that confidentiality may be broken.

Benefits:

The results of this survey will be used to give retention recommendations to the IW community. This is your opportunity to provide frank input to your community leaders.

Compensation:

No tangible compensation will be given for participation in the survey. Upon completion of the research, a copy of the final report will be available from LTJG Rob Linn, NPS Student, (ralinn@nps.edu).

Confidentiality and Privacy Act:

Please note that all survey records and data obtained during this study will be kept strictly confidential to the full extent permitted by law. All efforts, within reason, will be made to keep your personal information and your research record confidential, but total confidentiality cannot be guaranteed.

Your participation in the survey and your responses to the survey will not be disclosed to anyone outside of the NPS research team. Survey results will only be reported in aggregate so that individual responses cannot be determined. Upon completion of the survey, a complete copy of the data will be safeguarded by Dr. Ron Fricker at NPS, but all other records identifying your participation in the survey will be destroyed.

Voluntary Nature of the Study:

Your participation in this survey is strictly voluntary. If you agree to participate, you are free to withdraw at any time without prejudice.

If you have any questions or comments regarding this survey, please contact the principal investigator, Dr. Ron Fricker, 831-656-3048 (rdfricker@nps.edu), or LTJG Rob Linn, 608-215-4411 (ralinn@nps.edu). Any other questions or concerns may be addressed to the Navy Postgraduate School IRB Chair, LCDR Paul O'Connor, 831-656-3864, (peoconno@nps.edu).

I have read the above and understand that my participation is voluntary.

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Voluntary Statement

You must answer yes to the previous question to take this survey.

If you DO NOT wish to participate in this survey, please click on the "exit this survey" button in the top right corner, or exit out of this internet browser.

If you DO wish to participate in this survey, please hit the previous button at the bottom of this screen and go back to reanswer the previous question.

Information Warfare (IW) Retention Survey

IW Retention

Overall, how satisfied or dissatisfied are you with your job as an IW officer?

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very Dissatisfied

How long have you been an officer in the IW community?

- ☐ <2 years
- ☐ 2-4 years
- ☐ 5-7 years
- ☐ 8-10 years
- ☐ 11-13 years
- ☐ 14-17 years
- ☐ 18-20 years
- ☐ 21 or more years

In your opinion, does the IW community have any retention issues?

- ☐ Yes
- ☐ No

Information Warfare (IW) Retention Survey

IW Retention Factors

In your opinion, what are three major factors that affect IW COMMUNITY retention?

Please select the THREE most important factors that you think negatively affect IW COMMUNITY retention.

- ☐ Not enough pay
- ☐ IW leadership
- ☐ Lack of education/training opportunities
- ☐ Navy leadership
- ☐ IW culture
- ☐ Spouse employment
- ☐ Long work hours
- ☐ Lack of advancement to next highest paygrade
- ☐ Frequent relocations
- ☐ Individual Augmentation (IA) or Global War on Terrorism Support Assignment (GSA)
- ☐ Navy culture
- ☐ Lack of having a mentor
- ☐ Lack of command opportunities (i.e. CO or XO)
- ☐ Career opportunities in the civilian job market
- ☐ Time spent away from family
- ☐ Other (please specify)

Information Warfare (IW) Retention Survey

IW Retention Factors

Please rate the importance of the following factors, when you make your decision to continue or discontinue your Navy service.

	Very Important	Important	Some Importance	No Importance	N/A
Individual Augmentee (IA) or GWOT Support Assignment (GSA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The influence of a mentor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IW culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IW advancement to the next paygrade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Navy leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time spent away from family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pay	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IW leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spouse employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education and training opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IW command opportunities (i.e. CO or XO)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career opportunities in the civilian job market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relocation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Navy culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other(s) (please specify and rate using the scale above)

Information Warfare (IW) Retention Survey

Civilian Equivilency

Do you think you can make more money in a civilian equivalent job?

- ☐ Yes
- ☐ No
- ☐ I'm not sure

Information Warfare (IW) Retention Survey

Civilian Equivilency

How much MORE money do you think you can make in a civilian equivalent job compared to what you make now?

- ☐ \$0-\$5,000 more per year
- ☐ \$5,001-\$10,000 more per year
- ☐ \$10,001-\$15,000 more per year
- ☐ \$15,001-\$20,000 more per year
- ☐ \$21,001-\$25,000 more per year
- ☐ \$25,001-\$30,000 more per year
- ☐ \$30,001-\$35,000 more per year
- ☐ \$35,001-\$40,000 more per year
- ☐ More than \$40,000 more per year

Information Warfare (IW) Retention Survey

CSRB opinion

Do you think a Critical Skills Retention Bonus (CSRB) would be helpful in retaining more IW officers?

- ☐ Yes
- ☐ No
- ☐ I'm not sure

Information Warfare (IW) Retention Survey

CSRB opinion

Why do you think a Critical Skills Retention Bonus (CSRB) will or will not be helpful?

Please provide concise reason(s):

Information Warfare (IW) Retention Survey

Leaving Service

Are you seriously considering leaving Naval service in the next 5 years?

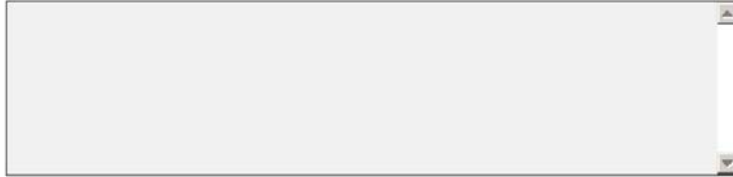
- ☐ Yes, I am seriously considering RESIGNING in the next 5 years.
- ☐ Yes, I am seriously considering RETIRING from service in the next 5 years.
- ☐ No, I am not seriously considering resigning or retiring in the next 5 years.
- ☐ No, but I am not authorized to serve the next 5 years due to statutory retirement.

Information Warfare (IW) Retention Survey

Leaving Service

Why are you considering resigning in the next 5 years?

Please provide concise reason(s):



Information Warfare (IW) Retention Survey

Copy of page: Pay Factor

Please indicate how much money would improve your quality of life, such that you would no longer seriously think about leaving the Navy for the next 5 years.

- ☐ No amount of money will improve my quality of life enough to influence my decision to leave or stay.
- ☐ Numeric value (please enter whole number in dollars below; for example \$1,000 or \$1,000,000)

Information Warfare (IW) Retention Survey

Leaving Service

Why are you considering retirement in the next 5 years?

Please provide concise reason(s).



Information Warfare (IW) Retention Survey

Pay Factor

Please indicating how much money would improve your quality of life, such that you would no longer seriously think about leaving the Navy for the next 5 years.

- ☐ No amount of money will improve my quality of life enough to influence my decision to leave or stay.
- ☐ Numeric value (please enter whole number in dollars below; for example \$1,000 or \$1,000,000)

Information Warfare (IW) Retention Survey

Tradeoffs

What is the MINIMUM amount of money that you would accept, in return for TWO ADDITIONAL years of obligated service?

- ☐ I would serve 2 additional years for reasons other than money
- ☐ \$12-\$5,000 per year (\$1-\$416 per month before taxes)
- ☐ \$5,001-\$10,000 per year (\$416 - \$832 per month before taxes)
- ☐ \$10,001-\$15,000 per year (\$832 - \$1250 per month before taxes)
- ☐ \$15,001-\$20,000 per year (\$1250 - \$1665 per month before taxes)
- ☐ \$21,001-\$25,000 per year (\$1665 - \$2082 per month before taxes)
- ☐ \$25,001 - \$30,000 per year (\$2082 - \$2500 per month before taxes)
- ☐ More than \$30,000 per year
- ☐ I would NOT agree to 2 additional years of obligated service for any amount of money.
- ☐ I am not authorized to serve two more years on active duty due to Statutory Retirement.

Information Warfare (IW) Retention Survey

Tradeoffs

What is the MINIMUM amount of money that you would accept, in return for FOUR ADDITIONAL years of obligated service?

- ☐ I would serve 4 additional years for reasons other than money.
- ☐ \$12-\$5,000 per year (\$1-\$416 per month before taxes)
- ☐ \$5,001-\$10,000 per year (\$416 - \$832 per month before taxes)
- ☐ \$10,001-\$15,000 per year (\$832 - \$1250 per month before taxes)
- ☐ \$15,001-\$20,000 per year (\$1250 - \$1665 per month before taxes)
- ☐ \$21,001-\$25,000 per year (\$1665 - \$2082 per month before taxes)
- ☐ \$25,001 - \$30,000 per year (\$2082 - \$2500 per month before taxes)
- ☐ More than \$30,000 per year
- ☐ I would NOT agree to 4 more years of obligated service for any amount of money.
- ☐ I am not authorized to serve four more years on active duty due to Statutory Retirement.

Information Warfare (IW) Retention Survey

Tradeoffs

Assume that a 4 year CSRB of the amount you indicated in the last question is available to you.

For example, if you selected \$10,001-\$15,000 for a 4 year commitment in the last question, this would be a total of \$40,000-\$60,000 CSRB paid to you over four years.

Please indicate the percentage of your total 4 year CSRB that you would be willing to exchange for a guarantee of each item listed below (rate each item separately).

One time amount you would
exchange for each guarantee:

Homeport/Duty location of your choice (the detailee will choose your tour of duty, but you can choose your location).	<input type="text"/>
Billet type of your choice (you get to choose what type of duty you go to i.e. sea, shore, or overseas duty, while the detailee chooses the location and command).	<input type="text"/>
One year Sabbatical (sabbatical is defined as an unpaid year to spend as you wish, while retaining benefits, but not accruing retirement time).	<input type="text"/>
Geographical Stability of 2 tours (geographical stability allows personnel to serve two consecutive tours or 6 years in the same location, while the detailee chooses the command).	<input type="text"/>
Educational opportunity (detailee sends you to a master's or doctoral program for up to 2 years to earn your next degree).	<input type="text"/>
Compressed work week (4 ten hour days, with 3 consecutive days off).	<input type="text"/>
Flexible work hours (at least half of your working hours are flexible over 2 eight hour shifts, i.e.: 0700-1500 or 0900-1700).	<input type="text"/>
Homeport/Duty location of your choice AND 2 tours of geographic stability (you choose location and the detailee sends you there for 2 tours or 6 years)	<input type="text"/>
Department Head billet of your choice (assuming both it is available, and you are eligible)	<input type="text"/>
XO or CO billet of your choice (assuming both it is available, and you are eligible)	<input type="text"/>
Option #1 (if you would like to add an option, please select a percentage to the right and label/specify below)	<input type="text"/>
Option #2 (if you would like to add another option, please select a percentage to the right and label/specify below)	<input type="text"/>

Please select a percentage to the right of the option(s) above, then label and specify that option below:

<input type="text"/>

Information Warfare (IW) Retention Survey

Other duty

Have you served as an IW officer in ANY of these locations:

***Washington DC & greater area**

***Norfolk, VA & greater area**

***San Diego, CA & greater area**

***Hawaii**

***Fort Gordon, GA**

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Other Duty

If you have served as an IW officer in the duty locations below, please indicate your level of satisfaction or dissatisfaction with the AREA/LOCATION as a whole.

If you have not lived in any of these locations, please select N/A.

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	N/A
Washington DC & greater area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Norfolk & greater area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
San Diego & greater area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hawaii	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fort Gordon, GA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you have served as an IW officer in any of the duty locations below, please indicate your level of satisfaction or dissatisfaction with the COMMAND you worked for.

If you have not served as an IW officer in these locations, please select N/A.

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	N/A
Washington DC & greater area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Norfolk & greater area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
San Diego & greater area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hawaii	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fort Gordon, GA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Information Warfare (IW) Retention Survey

Demographics

What region do you consider home (i.e. where you are from, or where you consider home, other than your current residence)?

- ☐ Northeastern (ME, NH, VT, MA, RI, CT)
- ☐ Middle Atlantic (NY, NJ, PA, WV, VA, MD, DC, DE)
- ☐ North Central (OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS)
- ☐ South (NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX)
- ☐ West (MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA)
- ☐ Alaska (AK)
- ☐ Hawaii (HI)
- ☐ I don't really have one
- ☐ Other US territory or country outside the US (please specify below)

Information Warfare (IW) Retention Survey

Demographics

How significant is being stationed close to this location to you?

- ☐ Very Significant
- ☐ Significant
- ☐ Neutral
- ☐ Little Significance
- ☐ No Significance

Information Warfare (IW) Retention Survey

Prior Enlisted

Are you a prior enlisted officer?

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Prior Enlisted

How many years of prior enlisted service have you completed?

- ☐ 0-1 year
- ☐ 2-3 years
- ☐ 4-5 years
- ☐ 5-6 years
- ☐ 7-8 years
- ☐ 9-10 years
- ☐ 11-12 years
- ☐ 13-14 years
- ☐ 15 or more years

Information Warfare (IW) Retention Survey

Demographics

What is your current pay-grade?

- ☐ CWO
- ☐ O-1
- ☐ O-1E
- ☐ O-2
- ☐ O-2E
- ☐ O-3
- ☐ O-3E
- ☐ O-4
- ☐ O-5
- ☐ O-6 or higher

Are you warfare qualified as an OFFICER?

- ☐ Yes
- ☐ No

Information Warfare (IW) Retention Survey

Demographics

How were you selected into the IW community?

- ☐ CWO program
- ☐ LDO program
- ☐ OCS (including prior-enlisted who were selected as an IW officer from OCS)
- ☐ ROTC (including prior-enlisted who were selected as an IW officer from ROTC)
- ☐ USNA (including prior-enlisted who were selected as an IW officer from USNA)
- ☐ Selected via a Lateral Transfer and Redesignation Board
- ☐ Selected after attrition from another program
- ☐ Other (please specify)

Have you ever been assigned to a GWOT Service Assignment (GSA) or Individual Augmentee (IA) billet?

- ☐ Yes
- ☐ No
- ☐ I'm not sure

Information Warfare (IW) Retention Survey

Demographics

How many MONTHS total did you serve in your GSA or IA billet(s)?

- ☐ 0-3
- ☐ 4-6
- ☐ 7-9
- ☐ 10-12
- ☐ 13-15
- ☐ 16-20
- ☐ 20-24
- ☐ 25-30
- ☐ 31-36
- ☐ 37 or more

Information Warfare (IW) Retention Survey

Demographics

Please indicate your age group below.

- ☐ 20-25
- ☐ 26-30
- ☐ 31-35
- ☐ 36-40
- ☐ 41-45
- ☐ 46-50
- ☐ 51 or more

What is your gender?

- ☐ Male
- ☐ Female

Are you married?

- ☐ Yes
- ☐ No

Information Warfare (IW) Retention Survey

Demographics

Is your spouse in the military?

☐ Yes

☐ No

Does your spouse live with you in this area?

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Demographics

Do you have children?

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Demographics

Do you have children living with you in this area?

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Demographics

Do you have children that do NOT live with you in this area?

☐ Yes

☐ No

Information Warfare (IW) Retention Survey

Demographics

Overall, please rate your level of satisfaction or dissatisfaction with the time you have to spend with your immediate family while being a part of the IW community.

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very Dissatisfied
- ☐ N/A

Information Warfare (IW) Retention Survey

Demographics

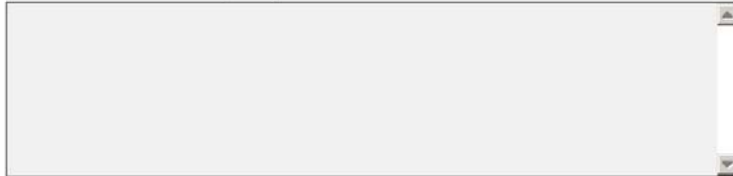
Do you think that a comparable civilian equivalent job would allow you to spend more time with your family?

- ☐ Yes
- ☐ No
- ☐ I'm not sure

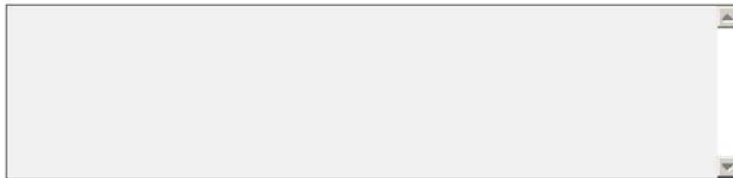
Information Warfare (IW) Retention Survey

Comments

Do you have any other monetary or non-monetary solutions that may help the IW community improve retention?

A rectangular text input box with a light gray background and a thin black border. It is currently empty.

Is there anything else that you would like see added or discussed in this survey?

A rectangular text input box with a light gray background and a thin black border. It is currently empty.

Information Warfare (IW) Retention Survey

Thank you

Thank you for your participation in this IW retention survey!

Survey results will be available as part of a completed thesis NLT August 1, 2009. To recieve a copy, please feel free to contact Rob Linn at (ralinn@nps.edu).

APPENDIX D. IW RETENTION SURVEY CONTACT E-MAILS

A. INITIAL CONTACT

Dear NPS Information Warfare (IW) Officers,

You have been selected to participate in a study to determine the effectiveness of an IW Critical Skill Retention Bonus (CSRB). The results of this study will be used to inform your community leaders how you feel about both monetary and nonmonetary retention factors. This study is sponsored by your IW community manager, CDR Heritage, BUPERS-315.

Tomorrow, you will receive an e-mail with a subject line entitled "IW Retention Survey" from myself, LTJG Rob Linn. I understand that your personal time is important to you. The survey has been kept short - it should only take about twenty minutes to complete.

This will be your opportunity to speak frankly to your community leaders about retention issues. Note that all information you provide will be kept confidential and will be released only as summaries with no identifying information. Once you have taken the survey, your name will be removed from the survey mailing list and upon completion of the survey, all records of your participation in the survey will be destroyed.

If you experience any difficulties with the survey or have any questions or comments about the study, please contact myself or Dr. Ron Fricker of the NPS Operations Research department.

Thank you very much for your cooperation.

Very Respectfully,
Rob Linn
LTJG USN
ralinn@nps.edu
Naval Postgraduate School
Monterey, CA

B. REQUEST FOR PARTICIPATION WITH SURVEY LINK

To: [Email]

From: ralinn@nps.edu

Subject: IW Retention Survey

Body: Dear [CustomValue] [FirstName] [LastName],

As mentioned in an E-mail to you yesterday, this is a request for you to complete an IW Retention Survey. It should take approximately 20 minutes.

Here is a link to the survey:

<http://www.surveymonkey.com/s.aspx>

This link is uniquely tied to this survey and your e-mail address. Please do not forward this message.

Again, thanks for your participation!

Sincerely,
Rob Linn
LTJG USN
Naval Postgraduate School
Monterey, CA

Please note: If you are NOT an NPS IW Officer, please click here:

<http://www.surveymonkey.com/optout.aspx>

C. FOLLOW-UP REQUEST FOR PARTICIPATION

To: [Email]

From: ralinn@nps.edu

Subject: IW Retention Survey

Body: Dear [CustomValue] [FirstName] [LastName],

Last week I sent you an E-mail link to a survey that asked you about an IW CSRB and retention issues within the IW community. To the best of my knowledge, that questionnaire has not been completed.

Many of your IW peers have already provided us with valuable feedback, both good and bad. I expect the results to be very useful to IW community leaders.

You are again being contacted because the opinion of every IW NPS Student is important, and only by obtaining the opinion of every student can we ensure that the results of the survey are accurate. In case the original E-mail containing the link was inadvertently discarded, please follow the link below and complete the survey.

Here is a link to the survey:

<http://www.surveymonkey.com/s.aspx>

Although we track who has responded to the survey using your e-mail address, please be assured that all responses are completely confidential. Once your survey is completed, your name will be removed from our list and you will not be contacted in connection with your answers.

This survey is completely voluntary, but highly encouraged. If you would prefer not to participate, please let us know by contacting LTJG Linn of the Operations Research Department at ralinn@nps.edu.

Again, thanks for your participation!

Sincerely,

Rob Linn

LTJG USN

Naval Postgraduate School

Monterey, CA

Please note: If you are NOT an NPS IW Officer, please click here:

<http://www.surveymonkey.com/optout.aspx>

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APPENDIX E. IW RETENTION SURVEY QUESTION 3 OPTIONS

Q3) In your opinion, what are three major factors that affect IW COMMUNITY retention? Please select the THREE most important factors that you think negatively affect IW COMMUNITY retention. (These levels were randomized for each participant)

This question also offered a selection of other: Ten participants selected this option and gave the following feedback:

- Lack of community information and direction.
- Senior officers that lateral transfer don't seem to be properly vetted. Many come over thinking it's going to be a cakewalk compared to their previous jobs as a SWO, leading to disillusionment amongst Junior Officers.
- Too much focus on navy admin and not enough focus on operational jobs
- No clear guidance from Naval Network Warfare Command (NNWC) as to where the IW community is heading - at least when we were cryptologists we knew what to expect. Now we don't know what we are exactly - someone in big navy needs to make up a clear focus for IW officers
- Naval personnel mismanagement- lack of tenable plan for IA/GSAs, out-dated pay system with bonuses to other communities who work less, lack of continued educational opportunities, overall the Navy would rather have jacks of all trades that only know Navy-specific admin and button-pushing rather than cultivating leaders and experts.
- Lack of direction from leadership. It seems every year the direction for the IW changes completely. I understand the need for change to keep up with the times but I believe that a set of fundamentals should stay the same. Also, the jobs that are competitive always

change. For example, the last year being PCS afloat has been the best thing to do, but in the past doing DIRSUP was enough.

- It sounds to me like the biggest problem is with LDO O-4s hitting 20 years and retiring.
- Our community lacks focus and seems to be in a state of constant reinvention. Our equipment and capabilities are decades behind state of the art. I speak specifically about our ship-board equipment. The lack of investment in this area severely limits what IW JO's can offer to a ship CO in way of real intelligence. The CCOP program attempts to address this but often runs afoul of the Navy installation process. We should focus on a small set of Core IO capabilities, invest in the equipment and training to become experts in these. The Navy model of "jack-of-all-trades" works well for non-technical professions, but IW is so tech heavy that it calls for specialization. I don't say these things lightly and know the problems with the procurement process, budgetary constraints, etc. I think that there is so much off the shelf technology that can be leveraged in our field and we are missing the boat. In many cases it would be far better to partner with industry experts (Microsoft, Google, and Motorola) and get the real experts cleared to work on new technologies for us instead of going back to the same well of insider companies who always seem to promise us low cost maintainable systems and simply deliver lemons time and again.
- Lack of job satisfaction. Most of the people I know enjoy their tactical jobs, but find many of the management jobs in the national side unfulfilling.
- In my opinion, a big portion of our community comes from the enlisted CT community or lateral accession from other officer communities. Retaining senior IW officers is our biggest challenge since many reach 20 years of service around the O3-O4 level and

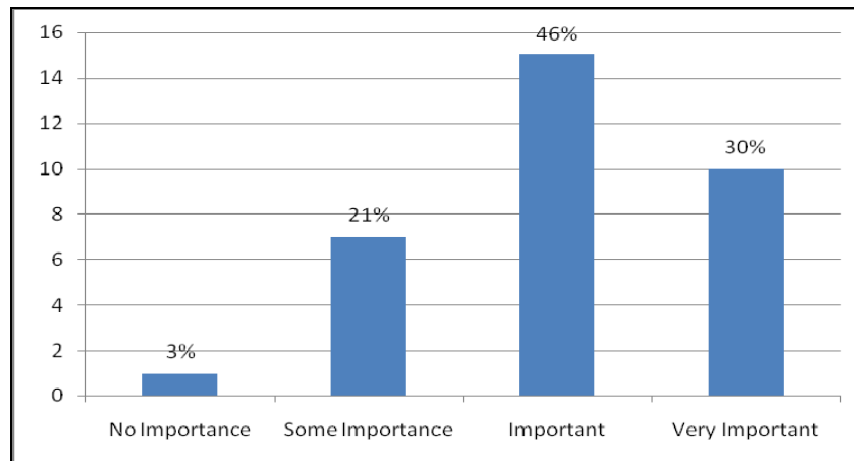
retire. At this time, they are ripe for picking from a handful of contractors/gov't jobs and the option to stay Navy is less appealing.

- Lacks a structured career paths to ensure proper development of well rounded leaders... While mentorship does help it would be better to know what the community expects of its officers.

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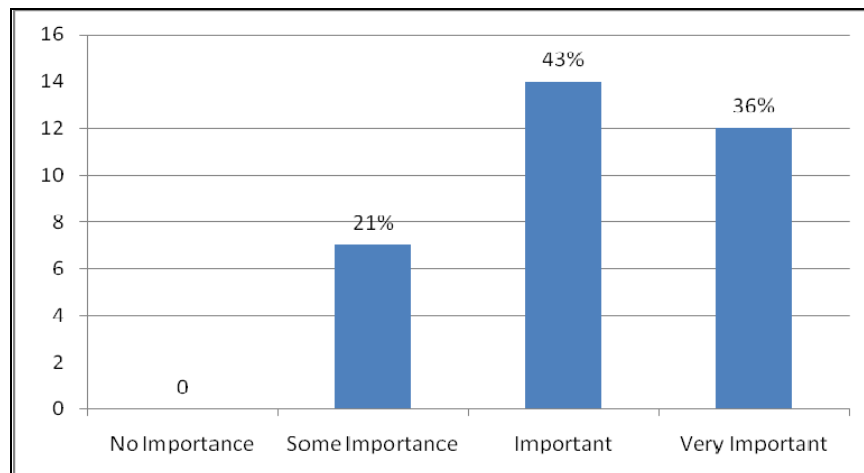
APPENDIX F. IW RETENTION SURVEY QUESTION 4 HISTOGRAMS AND OPTIONS

- **Career opportunities in the civilian job market**



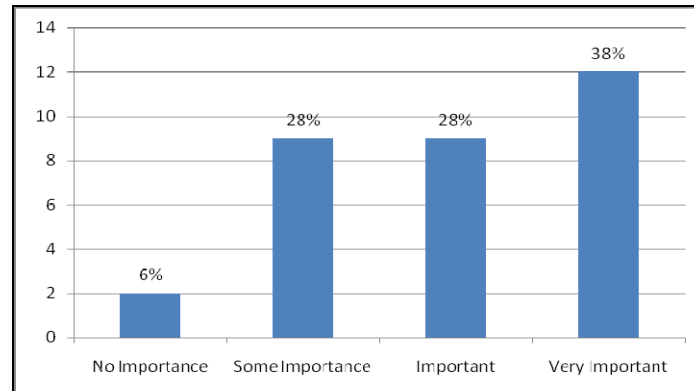
Mean = 3.03

- **Pay**



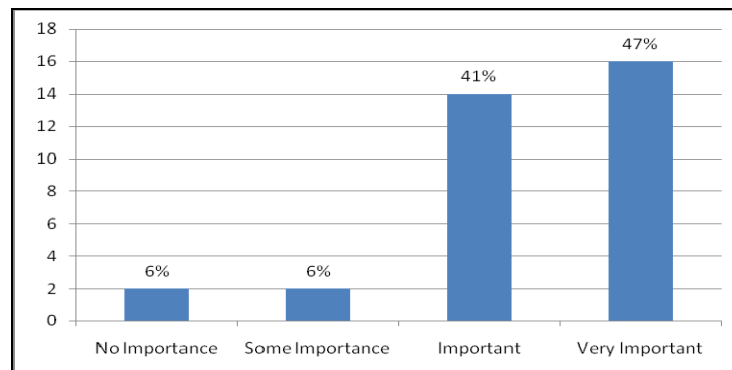
Mean = 3.15

- **Time spent away from family**



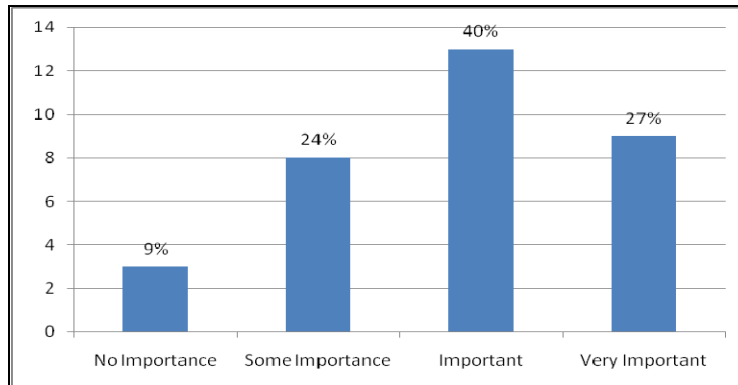
Mean = 2.97

- **IW leadership**



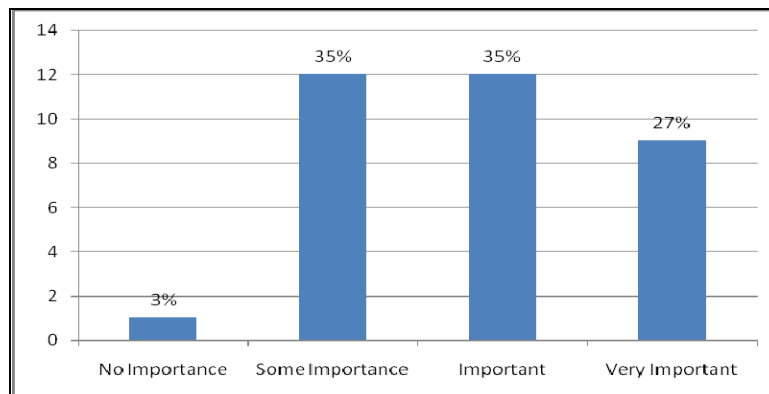
Mean = 3.29

- **IW culture**



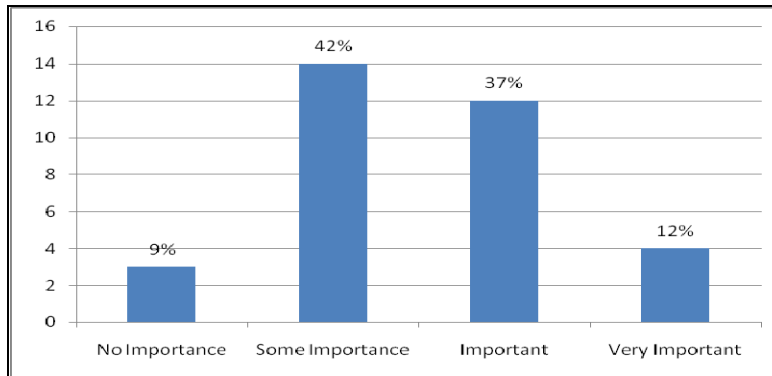
Mean = 2.85

- **Navy leadership**



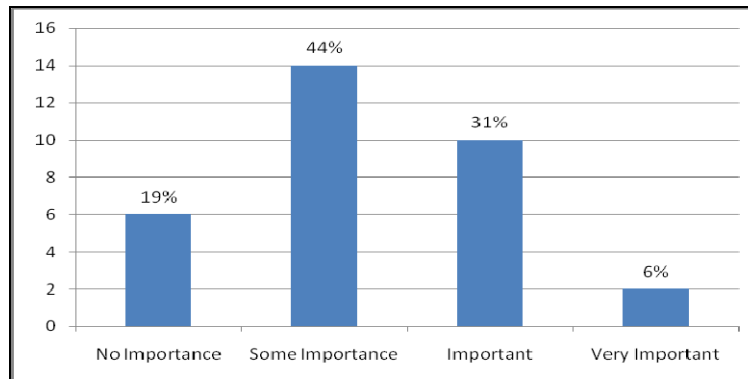
Mean = 2.85

- **Navy culture**



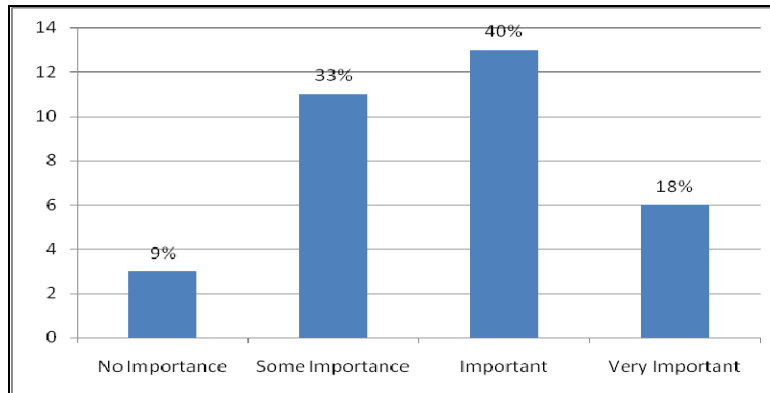
Mean = 2.51

- **The influence of a mentor**



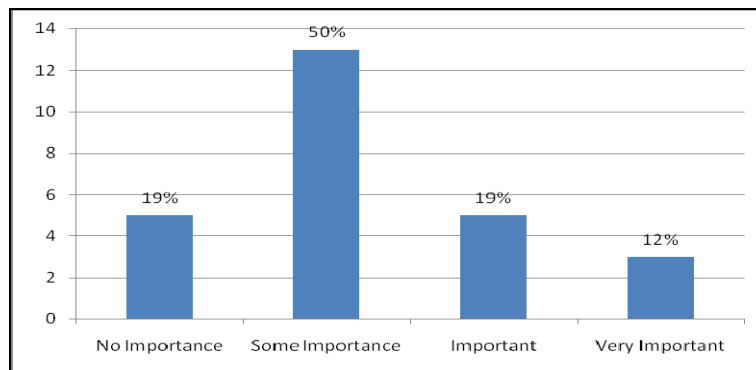
Mean = 2.25

- **Relocation**



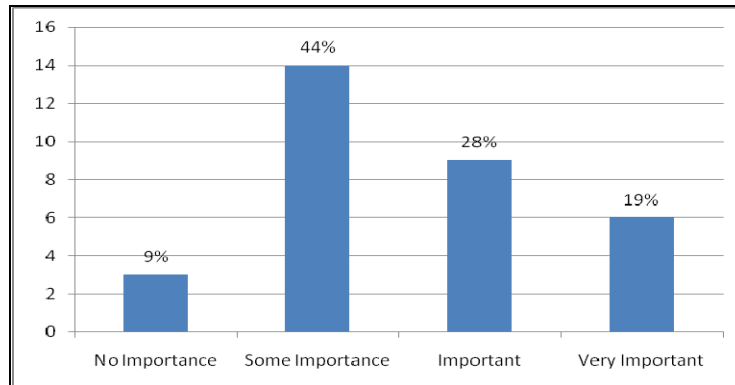
Mean = 2.67

- **Spouse employment**



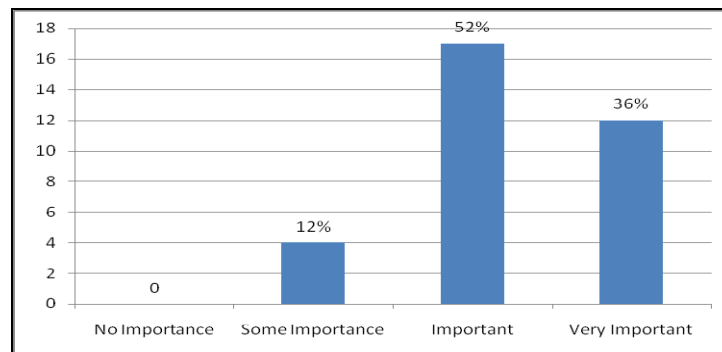
Mean = 2.23

- **Work Hours**



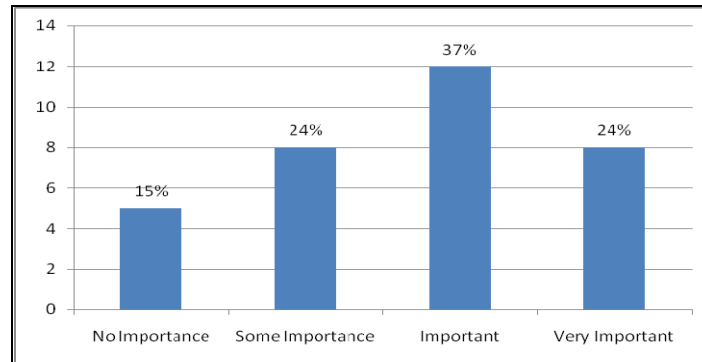
Mean = 2.56

- **IW Advancement to the next pay grade**



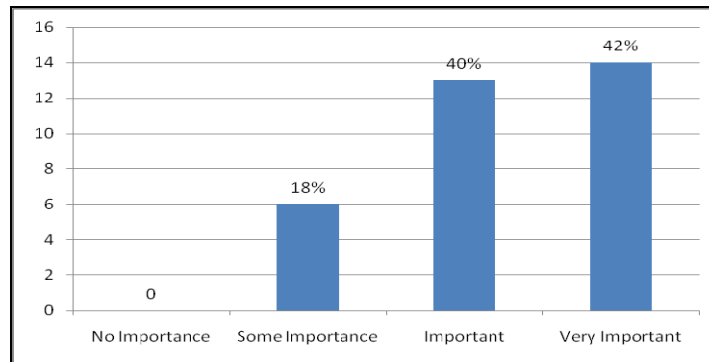
Mean = 3.24

- **IW Command Opportunities (i.e., CO or XO)**



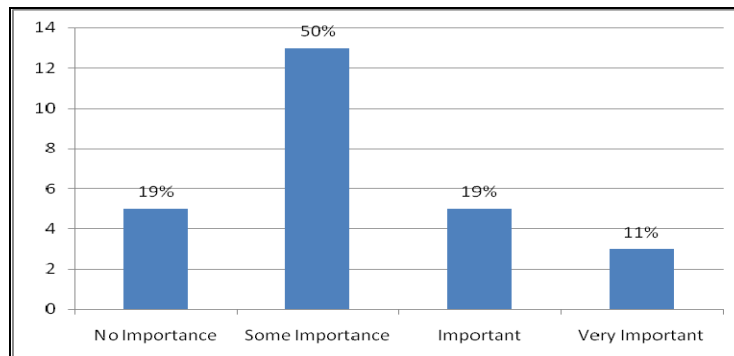
Mean = 2.70

- **Education and Training opportunities**



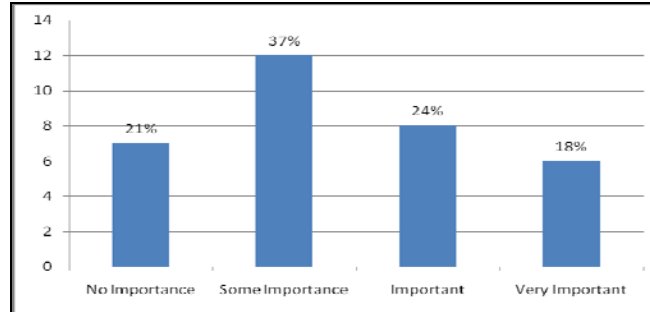
Mean = 3.24

- **Co-workers**



Mean = 2.23

- **IA or GSA**



Mean = 2.39

- **Other**

This question also allowed participants to list other factors they felt were important. Five participants chose to do so:

- Now that we are Information Warfare, many simply do not understand the community's role. We have assumed many new responsibilities without any additional formal training. Leadership has not defined our new roles & responsibilities. Evidence of this is that most other communities still refer to us as Cryptologists. This issue is Very Important.
- The single most important factor is becoming a technical expert/manager in Cryptology, which is the minimum to really understanding the pillars of IO and the technical side of intelligence collection.
- Potential for smooth transition into the IW community with opportunities for advancement and command.
- Again, the job satisfaction element will be the most important for me. If I keep enjoying my job and getting deployment opportunities, I will keep doing it.
- The ability to develop, retain, and use technical abilities, specifically those related to computer network operations (Very Important). The perception that my service is meaningful and worthwhile (Very Important).

APPENDIX G. IW RETENTION SURVEY QUESTION 8 OPINIONS

Q8) Why do you think a Critical Skills Retention Bonus (CSRB) will or will not be helpful? Please provide concise reason(s):

This open-ended question was answered by 33 of 34 respondents. Their specific inputs are as follows:

- Because officers often calculate what they make per hour and realize that it isn't much since they work such incredibly long hours. If service commitment means giving up your family and your finances, then they are likely to leave the service.
- I think it would help retain some people that would otherwise retire. I am pretty sure I'm staying in, but this would play very much in my decision as well.
- Some people would probably stick around for a little more money, particularly with the bad economy. It would force the community to define what the critical skills are in order to justify the bonus. Lack of community definition/direction is a major retention issue.
- I believe that most IW officers will continue to serve if given opportunities for real training (not to be confused with formal education) and by being shown that there is a path for advancement. I have not heard a lot of fellow IW officers complain about the money we are paid and have not heard of any that have separated because the pay was no high enough.
- I think that because our community has a lot of prior enlisted officers, who by timing in their careers, have an easy means to retire after 20 years as an O4/LCDR. If there were a reasonable bonus amount, the Navy might be able to retain those personnel for another 10 years or so—I know it would probably influence my decision.

- You get what you pay for. If the Navy is not willing to reward and develop its IW professionals, it makes it very difficult to stay in a lower-paying job with all the attendant relocations and mismanagement that come with staying Navy. There should be more equity in pay for critical skills and job performance.
- Pro: It will help to retain officers with critical skills, this is necessary in order for senior officers to truly mentor junior officers. But, there are so many senior officers who have less time as IW than junior officers (lateral transfers), should they receive the bonus as well? Con: How do you measure which officers have the critical skills to qualify for the bonus? Some officers career path makes them excellent staff officers, but not necessarily technical experts/managers. Will our Designator be the only qualification? Graduation for NPA? A tour in each major area? Any masters or a Technical masters? How do you apply this fairly across such a diverse career field?
- The bonus helps close the gap between what one makes as an officer and what one would make as a civilian.
- I look at other communities and see that they are rewarding the officers that chose to stay in the fleet and continue progression of their crucial jobs. I look at aviators, submariners and SWOs as core competencies in the fleet but then again I am being asked, as IWO, to go out there and spend the same time away from the family and the same work hours, but getting paid less because everyone else gets CSRBs. Also of note, Most IWOs have the opportunity to work for other agencies or contractors and make a substantial amount of money. Yes it's true that we serve for the patriotism, but it would be much easier to be away from home knowing that the grass, the civilian world, is not greener on the other side or that the contractor sitting next to me is not getting paid almost twice the money for the same job and less hours.

- Due to equality with Intel Officer brethren
- Financial enrichment is not the main reason why people join the Navy; therefore more money will not change their mind if they want to leave.
- The IW Community is very heavy with prior enlisted which is good and bad. Good in that our depth of experience and technical knowledge is unmatched, bad in that just as our junior officers get to a rank that allows them to seriously affect change in the community they retire. A CSRB could persuade those IW officers to stay in the additional three or four years to bridge the gap in experience and technical knowledge. It could also keep the younger generation of IW officers from jumping ship to the civilian sector for a few years.
- At specific decision making points—The 4/5 year mark, a CSRB would entice younger JO's who already have all the prerequisite clearances and knowledge to be effective in the EW world to decide against getting a Gov Civilian or contractor position. This would keep prerequisite knowledge available for needed Department Heads. One thing to keep in mind is there are many very knowledgeable prior enlisted that make up the majority of the IW ranks. Many are getting out at 20 years as LT/LCDR's when we could use their vast knowledge in the CDR/CAPT ranks. Maybe if you entice them at the 20 year mark to stay another 5-10 years we could solve our leadership issues of not knowing where our community is going or what we should be concentrating on. We went from SIGINT to everything IO. There is no way an IWO can be proficient in everything IO.
- Many officers leave due to a perception they can make more money in the civilian world. Whether or not this is true, a CSRB would make the decision to leave harder. Furthermore, it has the

added affect that the officer feels appreciated and wanted by the Navy. This is especially true for the IW community as we are one of the only officer communities without a CSRB.

- As with all pay to play bonuses, money for a commitment extends commitments.
- It seems like there are some great opportunities as JOs. Retention at the O-3 level is not an issue. The problem area seems to be the O-4/O-5 level. Some type of O-4/O-5 retention bonus would help keep your O-4/O-5 billets filled with your top performers and give you a competitive pool for senior leadership opportunities. This is how I would classify the windows for an effective retention bonus:
 - O-1,O-2,O-3 on initial commitment—No real retention issues.
 - O-3, 6-8 years: Potential to get out—Could be enticed to stay in by the fact that a retention bonus is available in a couple of years. Offering a bonus during this period could be too early resulting in an incurred bonus commitment being fulfilled prior to the critical retention window.
 - O-4/O-5 at 9-16 years: Offer some sort of retention bonus to keep O-4s/O-5s through this period.
 - O-5/O-6 at 16-20 years: Retirement at 20+ years will be enough to keep folks through this period.
 - O-6/O-7 at 20+ years: No real retention issues.
- To address the issue of O-4 LDOs retiring at 20 years, the bonus would have to be available to them at the 19-24 year range.
- CSRB will be only way to retain young officers with highly skilled in computer science/CNO field or any type of experience in this field. As cyber defense field is becoming more significant, anyone with

comp science background (especially with military background) will be demanded for jobs from contractors/other government agencies with higher salaries.

- Well, first you are asking if a CSRB will retain more officers and that may not be the right question. The data from other officer communities indicates that CSRB payments do improve retention. However, are you retaining the people you want to retain or just the people who are only looking for more money to do the same job, or who really do not care one way or the other? Honestly, the CSRB will only reduce feelings of unfairness among IWs who see SWOs, submariners, pilots, and intelligence officers receiving bonuses. The feelings of unfairness grow from seeing substandard officers in those communities receive bonuses simply because of designator and not performance while IW officers, who do much the same work (on staffs for example) do not receive such bonuses. The retention issues past O4 seem to be for those IWs who are prior enlisted. This indicates not an issue with pay but an issue with IW culture and leadership—the Mustangs are “voting with their feet” because they realize this community’s culture is dysfunctional (but not in the same way as SWOs) and more importantly because community leadership seems confused and lacking in vision. Those prior enlisted who have served 10 years commissioned service seem to be leaving in droves and it is unlikely that money is the issue given their already higher pay rates.
- The skill sets developed by Information Warfare Officers today are in high demand in the civilian job market. This is true both in the government related contracting world and in the non-government world as the skill sets, especially those related to development and protection of networks, communications, etc.

- Money talks. (Although there should be strict qualification requirements to make sure we retain the RIGHT people...not everyone is a good candidate for retention.)
- Our community has many officers that decide to serve for ideological reasons, but once exposed to the National Cryptologic environment, they realize they can continue to serve our country in much the same way without needing to experience the same rigors of military life through work as a GS or contractor. They are likely to experience external pressure from their families to work in a more stable situation, without the need to relocate or deploy, and to be able to make more money as a civilian. I think a CSRB will help to retain many people who would like to remain on active duty, but who cannot justify the additional hardships endured while being paid less than they might otherwise.
- It depends on who its targeted to. Mid Career O3's with less than 10 years are certainly at a decision point and could be tipped by a financial reward. Also, our community has a problem keeping O4's (most punch at the 20 year mark). If correctly targeted and marketed, it could certainly help with retention in either of these cases.
- Combined with the current economy, it would probably tip the balance for some people on the fence. Honestly, though, we have so many officers with prior enlisted service that I don't think retention is a big problem, with the exception of those who retire as O-4s.
- It will keep educated officers, with master's degrees in Electrical Engineering and Computer science, from seeking civilian employment in lucrative fields upon completion of their commitments.

- IW is a different kind of community than SWO of Nukes. People that want to do the job will probably stay with or without the bonus. People that really want to leave will leave.
- CSBR would not benefit those of us who come from prior service and already aim for retirement from the Navy. Keeping IWs in past 20 is the challenge, and why I think some form of CSRB would be beneficial to retain the experience and skill set our community needs. Since our merger with NNWC, the unmentioned "disorganization" at the top could use people with 20+ years of experience to sort out our role and responsibilities. Up to O3, our community has many advantages over other designators in that we typically don't have back to back sea tours and the IW culture is much more positive, hence CSRB is not beneficial to keep people after their initial obligation.
- CSRB attached to a time remaining in service requirement would provide guaranteed personnel levels for the community. Also, it's currently hard for the military to compete with the civilian workforce when there is a legitimate 30-40K difference in salary. Military benefits are on the out, and therefore do not have the same leverage in retaining people that they once did. Bonus isn't going to change the minds of those who are intent on getting out, but it would positively influence those on the fence to continue service.
- It seems that the IW community has a high percentage of prior enlisted officers. That means there are a lot of junior officers with a lot of experience that don't stay in past O4. Because most of our jobs are done by civilians, it is very easy to get out of the Navy and keep doing the same job for the same money without having to deploy.

- The Navy will always benefit from keeping those that have the most experience in a field. In our community, experience will always be a priceless commodity.
- I believe that we have a shortage of LCDRs, and while we can't change the turmoil the community is experiencing (changes in technology, organization, etc.), we can give them a financial incentive to stay which might fill that hole.
- Compensation for high skill value would assist in balancing issues with deployment and transient status. Additionally, it offsets outside job offers which have recently been over Navy pay and allowances by ~30K. It would not offset issues with people unhappy with work environment.
- Most people are motivated by financial incentives, to a certain degree. Our community, if trained properly, has technical abilities that are highly sought after in both the public and private sectors. Our community faces demanding OPTEMPOs through direct support, IA/GSA, and PCS deployments.
- It will help to offset the obvious difference in pay between the military and civilian sectors. The place where this is needed most is in the senior O-3 through O-5 pay grades. It is at this point that our middle to upper managers are getting out in favor of civilian jobs. It would not be hard to entice these people to remain in the Navy for they, most often, have around 20 years in. Convincing them to stay in would not be difficult; they are already used to the lifestyle.

APPENDIX H. IW RETENTION SURVEY QUESTION 10 OPINIONS

Q10) Why are you considering resigning in the next 5 years? Please provide concise reason(s):

Nine participants left nine open-ended statements to explain their possible future resignations as shown below:

- Relocation
- My reasons have less to do with dissatisfaction with the job and more to do with the fact that when I joined, I only intended to serve a few years before entering the private job force. It is still my hope to do so, though I am not 100% committed to leaving the Navy. However, soon I will be getting to the point in my life where I do not want to move around the world at the whim of the Navy, and would like to settle down in a location on my own terms.
- My wife's career is much more contingent on location stability; the Navy makes it extremely difficult for us to be able to stay co-located, let alone try to start a family. Navy senior leadership's personnel mismanagement. Of the ~10 O-5 level officers I have worked for, there is only one that I consider a good leader and someone that I would like to work for again. The callous disregard for personnel in the Navy is disheartening. Senior Naval leadership comments seem to show they are more interested in their own careers and appearing to support "diversity" rather than making a competent force capable of defending our nation in a dangerous world. Lack of continued educational opportunities. Once I finish my M.S. at NPS, it is highly unlikely that I will be able to continue on to a Ph.D. in the Navy, or gain the required job skills commonplace in the equivalent civilian field.
- Better pay and less time away from family.

- Time away from family, pay, equality in bonus, job advancement opportunity.
- After a pay back tour I will have over 10 years involved with the SIGINT community. I could easily get GS position with NSA, NRO, DOD, with my experience and clearance. It would also be easy to obtain a contractor position at many different locations. I could over double my pay because my spouse could actually maintain a good job with upward mobility instead of moving every 2 years and basically starting over.
- I want to pursue another line of work.
- Quality of life. Being at sea is hard on the family. Haven't made a decision yet though.
- The lack of a defined career path for computer network operations. The probability of becoming a mid-level "paper-pusher" as I gain rank. The perception that my time, efforts, and sacrifices are often wasted due to poor decisions from higher leadership. The desire for stability as my kids approach high school age.

APPENDIX I. IW RETENTION SURVEY QUESTION 12 OPINIONS

Q12) Why are you considering retiring in the next 5 years? Please provide concise reason(s):

Eleven participants left open-ended statements to explain their possible future retirement. Specific statements are shown below:

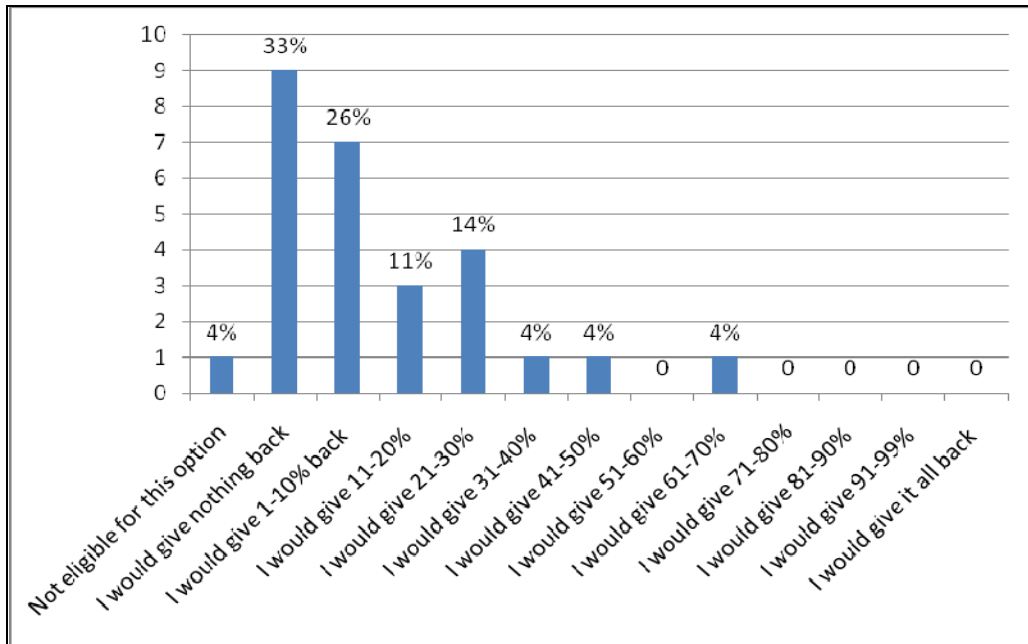
- The financial and family strain/stress has taken its toll on my relationships at home. I may have to leave the service to get a job with more regular hours to keep the peace.
- I have done my time and no longer wish to be separated from my family for any length of time. The job is not satisfying enough to warrant continued sacrifice by myself and my family.
- I'm tired of moving and I would like to stay in one place for at least 3 years. When looking at prior advancement stats to the next rank, it would be a gamble for me to stay in past 5 more years. I would need reassurance of where my community was headed, so that I could better plan the next 10 years of my service. Right now, I don't see any point to stay past my current rank.
- I do not like the direction the community is heading. There are so many mid- grade and senior officers who do not truly understand the technical requirements of our community. Furthermore, there are no senior officers clearly stating what those skill requirements should be. There are clear indications that officers measure success not by their technical prowess, but by whether they simply tow the party line, which changes direction often and without academic rigor and/or intelligent debate. Furthermore, I find it insulting that Navy officers, outside our designator, are trying to fill the void and state minimum skill requirements, which they do not understand, vice simply writing requirements, which they would like for us to fill.

- Civilian career opportunities along with more stability due to the fact that one must move so often in the military. Deploying is ok after 20 years only if I could homestead more often. This will allow me to provide some stability to the family.
- In order to spend more time with my children.
- I don't feel that my work is as rewarding as something in the private sector where I would actually produce something.
- I have a wife that has been unable to work in one job for more than a couple of years due to constant relocation, and children that will be in high school, so it will primarily be related to easing the burden that military service has placed on my family.
- I wish there was an option for just "considering" retirement versus "seriously considering". I am eligible to retire within 5 years and the civilian market has much to offer.
- With so few command opportunities and the uncertainty in our community, I will likely move to the private sector.
- Major negatives for remaining in include transient status, and lack of IW community focus towards becoming a URL community with leadership opportunities.

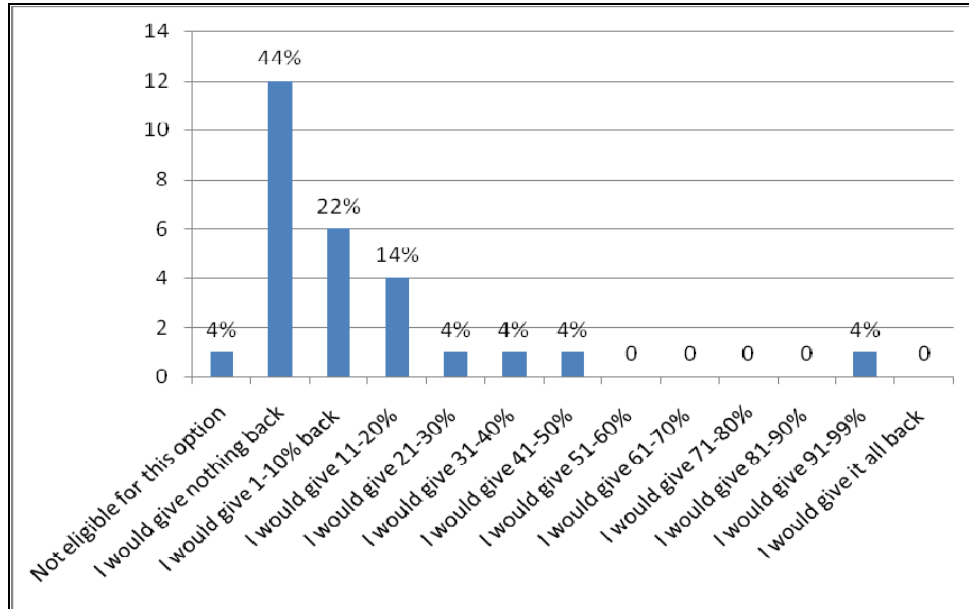
APPENDIX J. IW RETENTION SURVEY QUESTION 16 HISTOGRAMS AND OPTIONS

Twenty-nine participants answered these questions and their responses are shown below. For the purposes of showing complete histogram labels, the responses for Question 16 were shortened. The complete question wording can be found in Appendix C.

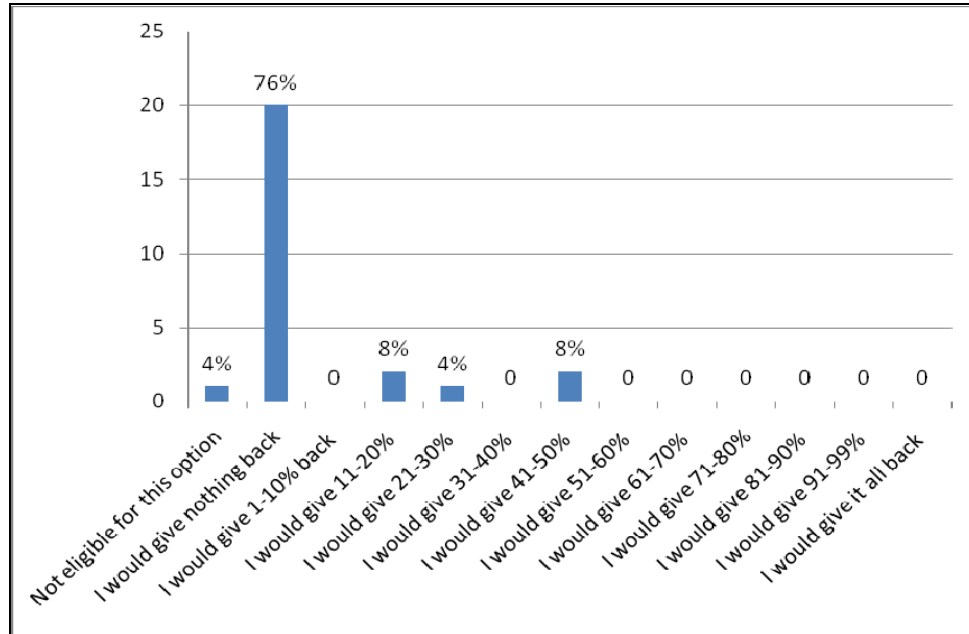
- **Homeport/Duty location of your choice (the detailer will choose your tour of duty, but you can choose your location).**



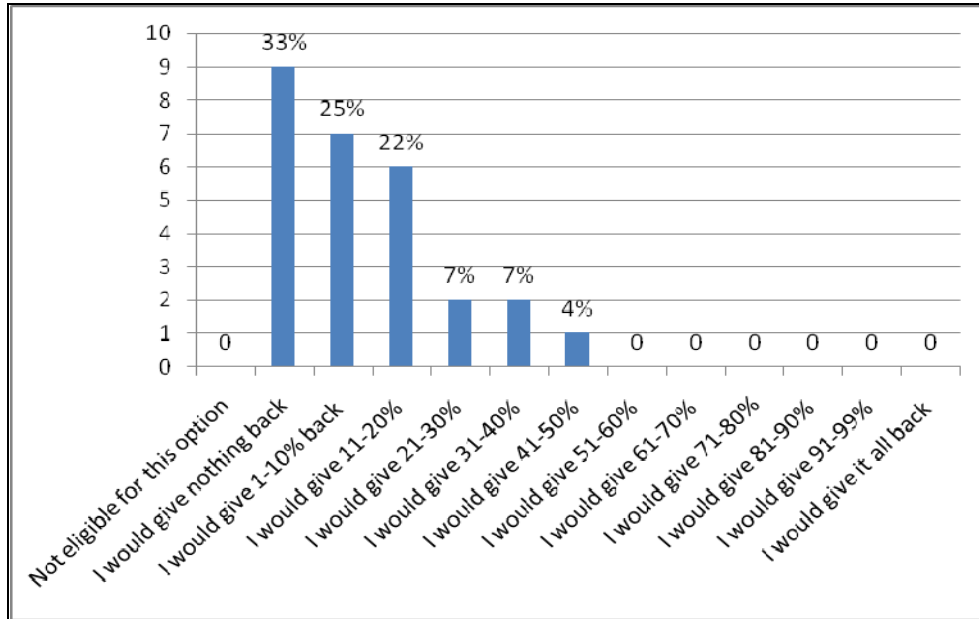
- Billet type of your choice (you get to choose what type of duty you go to, i.e., sea, shore, or overseas duty, while the detailer chooses the location and command).



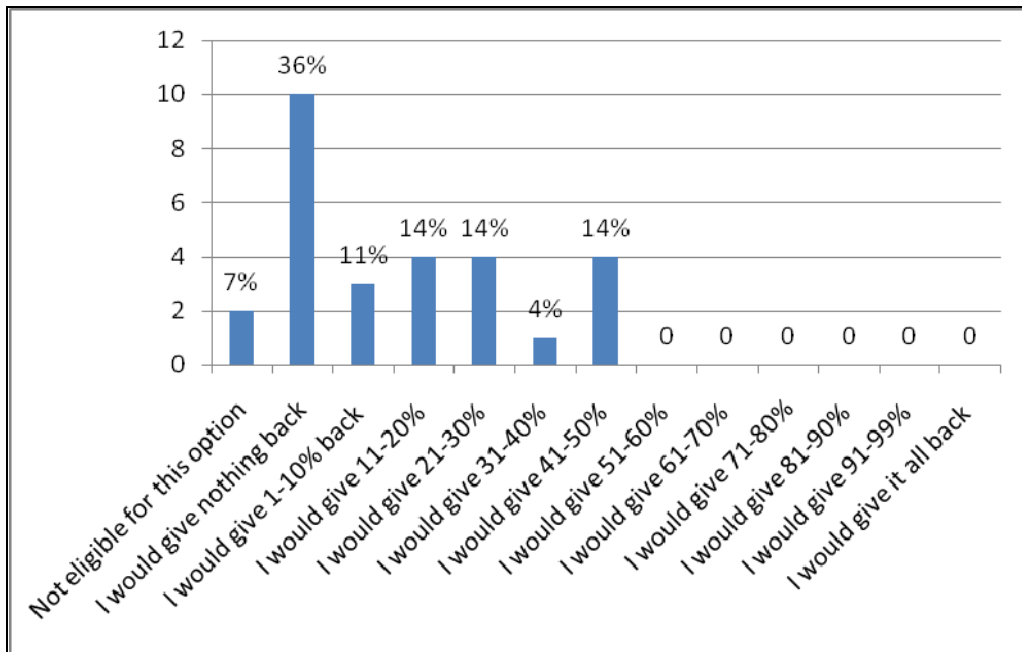
- **One year Sabbatical (sabbatical is defined as an unpaid year to spend as you wish, while retaining benefits, but not accruing retirement time).**



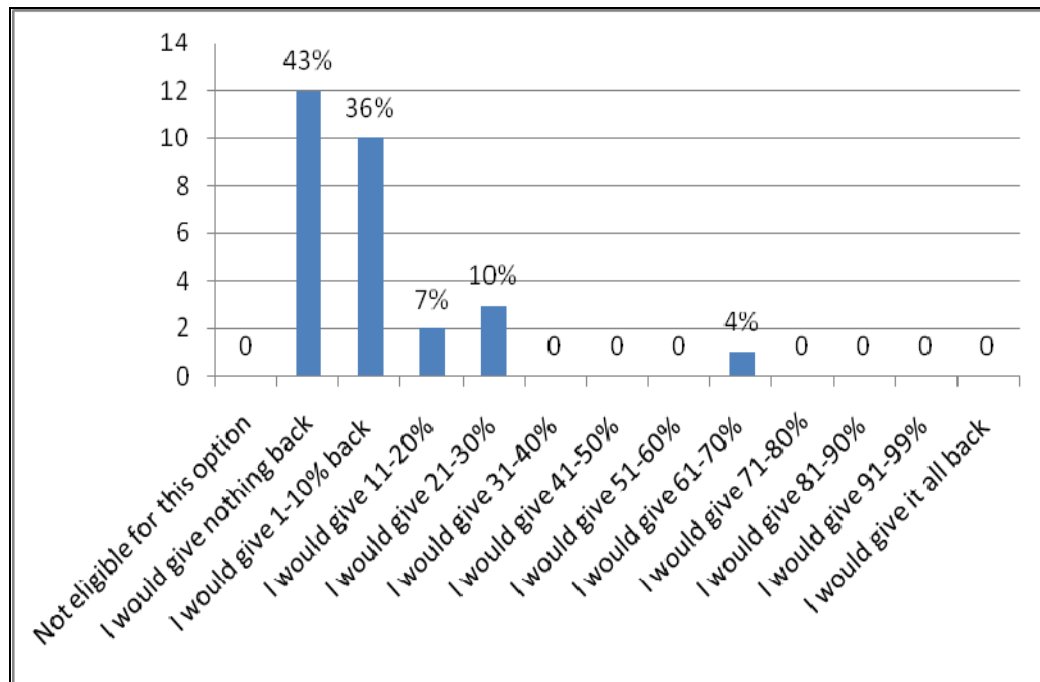
- **Geographical Stability of 2 tours (geographical stability allows personnel to serve two consecutive tours or 6 years in the same location, while the detailee chooses the command).**



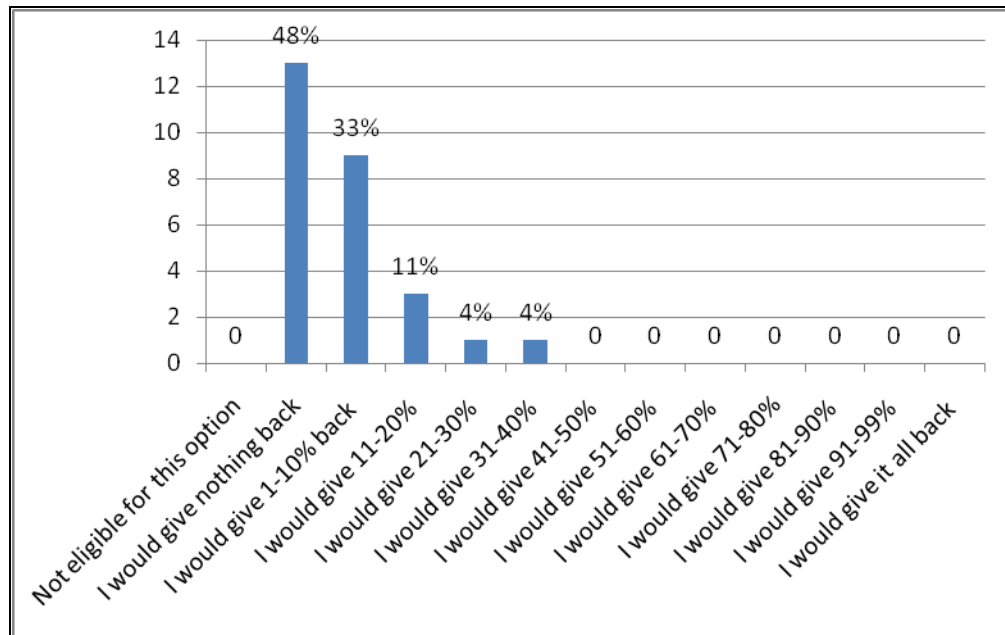
- **Educational opportunity (detailee sends you to a master's or doctoral program for up to 2 years to earn your next degree).**



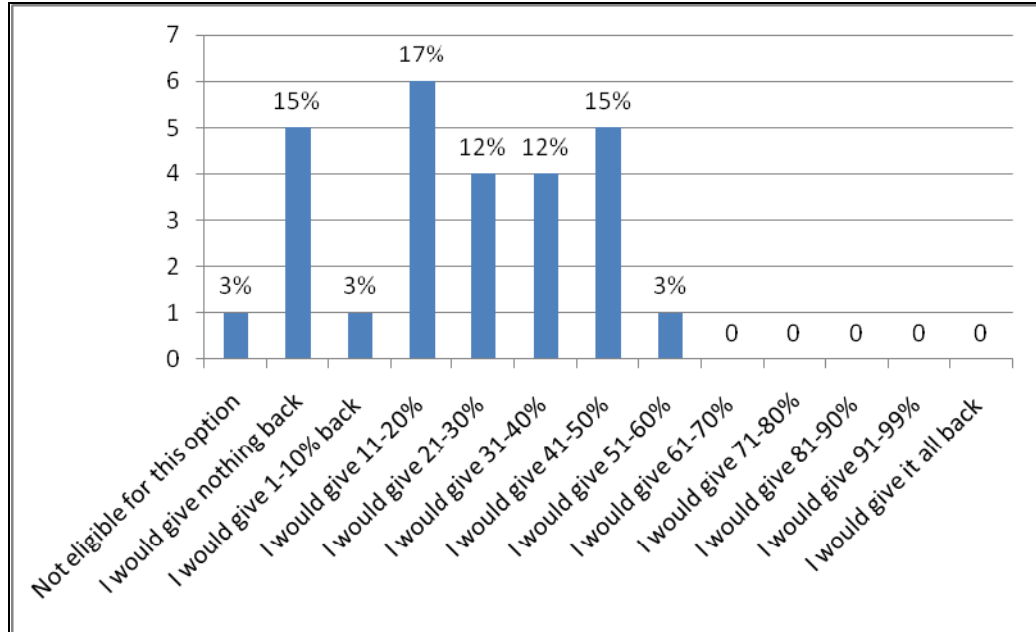
- **Compressed workweek (4 ten hour days, with 3 consecutive days off).**



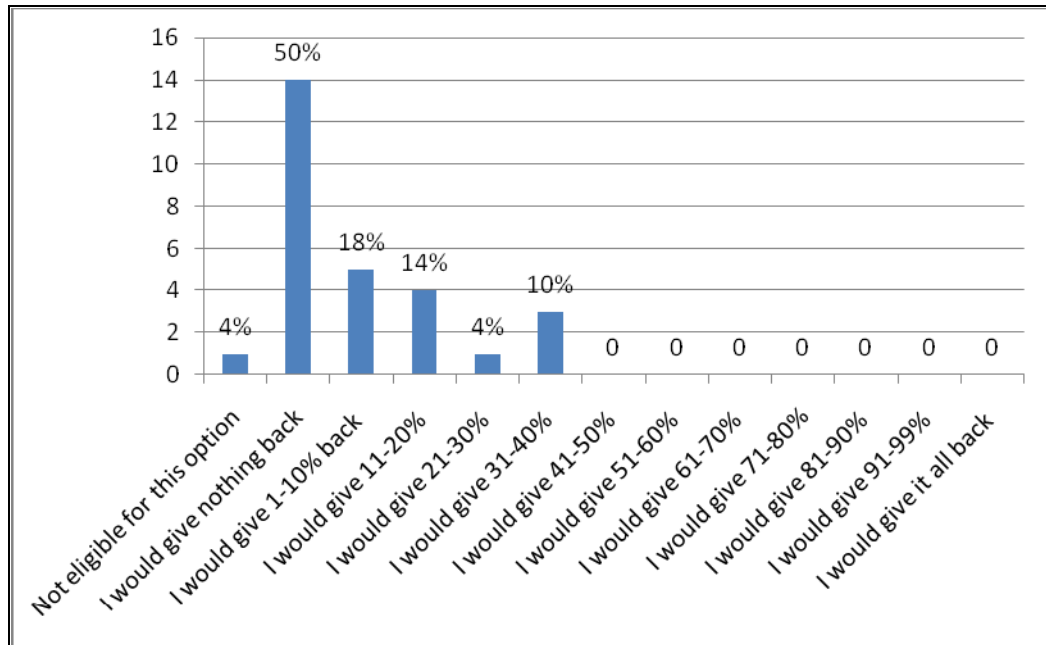
- **Flexible work hours (at least half of your working hours are flexible over 2 eight-hour shifts, i.e.: 0700-1500 or 0900-1700).**



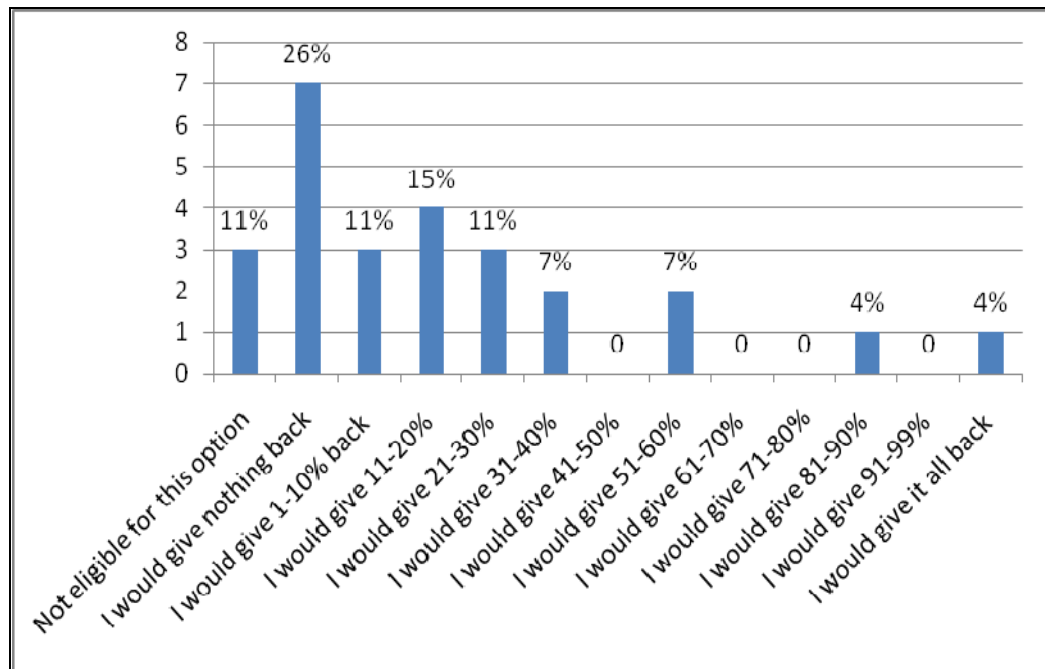
- **Homeport/Duty location of your choice AND 2 tours of geographic stability (you choose location and the detailee sends you there for 2 tours or 6 years)**



- **Department Head billet of your choice (assuming both it is available, and you are eligible)**



- **XO or CO billet of your choice (assuming both it is available, and you are eligible)**



- **Options**

This part of the question gave the participant the ability to create their own option and disclose what percentage of their CSRB they would be willing to give for that option. Four participants used one or two of these options as follows:

- I would give it all back for: The ability to actually perform within my area of expertise and permanent assignment to perform such duties at a shore facility without requiring deployment, even if this meant no promotion opportunities.
- I would give 61%-70% back for Homeport/Duty location of your choice AND 2 tours of geographic stability (you choose location and the detailee sends you there for 2 tours or 6 years) AND NO retribution from promoting promote (i.e., do

not hold it against the individual for taking the option to stay in one area - allow the individual a fair opportunity to promote)

- I would give 41%-50% back for up to 2 yrs to work on PhD.
- I would give 91%-99% back for 100% Language training at DLI followed by min 1 yr in country training, followed by 3 yr duty related to this areas security issues. This will really make me feel the Navy and the IW community takes a common-sense approach toward training and preparing its officers for SUCCESS.
- I would give 11%-20% back for IA/GSA billet of choice.
- I would give 11%-20% back for choice of billet for two tours.

APPENDIX K. IW RETENTION SURVEY QUESTION 24 OPINIONS

Q24) Do you have any other monetary or nonmonetary solutions that may help the IW community improve retention?

This was one of two open-ended questions toward the end of the survey. Nineteen participants responded as shown below:

- Actual education vice MILITARY education (taught by ones who WANT and HAVE THE ABILITY to teach - not just checking a box for promotion purposes), educate the community via Distance Learning on SIGINT math from NPS, or other comparable educational system (as part of IW qualification process).
- The community assumed responsibility for many new duties when we merged with NETWARCOM, however, we have not defined or trained for any of them. We simply changed our name and have confused everyone, including ourselves, as to our purpose. The initial training I received when I joined the community was the worst I have experienced during my career. Note that this was before the merger when we actually knew what our job was supposed to be. I see no evidence that we have improved and we still rely almost entirely on OJT.
- There are two areas that I feel would greatly improve retention in the IW community:
 - Training: Many IW officers are sent to billets without the proper training or experience. There is almost zero formalized training (outside of graduate school) and the performance of IW officers is greatly affected. The wide range of missions now covered by IW requires more (not less) training and on the job training is not reliable.
 - Advancement / career path: There is no established career path and many IW officers float from one billet to the next

without any real plan. No mentoring and a lack of focus from one detailer to the next makes it difficult to plan a successful career. The fact that many of the senior billets at NNWC are occupied by non-IW officers(or new lateral transfer O-5 / O-6) does not hold a lot of promise for the career path of current IW officers.

- Given the responsibilities one faces at this stage of a career, i.e. many have children entering college at this time, a significant bonus would be an attractive retention tool.
- I think the first and foremost issue that needs to be resolved is to solidify where the IW community is heading. Too many rumors of IW officers being forced converted to Intel and vice versa, and the confusion as to where we're headed within the cyber community. If you want better officers then you need to allow us to focus more in a specific area instead of being a mile wide and an inch deep with knowledge. There needs to be more focus on taking care of the officers in the O4 and below ranks. The mentoring program is a joke.
- Its all about the work environment, leadership, and quality of life issues (in addition to pay).
- Job satisfaction is key!!! Our community has become responsible for such a large area of responsibility, all based on technical proficiency and management of those technical fields to fulfill the needs of the Navy. The ever changing, and therefore the lack of clear direction, is evident. The grand plans which filter down from Norfolk never work and are often dismissed by officers, as well as senior enlisted. How can we ever lead the community into the future when we can't even agree on the direction? We need a senior officer who can commit his/her time to improving our

community based on intelligent debate and academic rigor (Our Admirals are so multitasked with their assignments; they do not have time to focus on us).

- I would like to see a depth of skill added to our immense breath of experience. The traditional SIGINT functions 1610s have performed are just as important as ever, but the value of career diversity seems to trump the value of being a SIGINT expert. This problem is exacerbated by adding roles in the Cyber realm to our list of requisite skills. Why not encourage our 1610s to specialize in a particular area for multiple tours before shipping them off to get that next check in the box?
- Matching your TSP contributions. The ROTH TSP was a good start at moving the TSP forward. The next logical step would be to match the contributions.
- Nonmonetary: There was talk long ago about allowing officers to be technical specialists (outside of the LDO community) or have areas of focus. For example, allowing an IW officer to focus on CNO professionally and be offered jobs that continue to enhance that specialty. Moving from one type of job to the next requires excessive time just to build corporate knowledge about the nature of the job; time which could be spent improving the process if that knowledge was already founded through past tour experiences and training.
- Nonmonetary: Community identity...I think more information, strategic goals and operational plans, needs to be pushed out to the IW officers. While this may not be a problem at the magnet sites where large concentrations of IW officers reside, those of us on ships or working at other agencies are kept in the dark about the day to day events of our HQ...if the means to push information is already there, it needs more marketing and visibility. Sometimes

our personnel are treated as SWO's while PCS afloat, which is good for the ship CO's, but not for IW skill sets.

- It's all the people you work with: big Navy, IW, or civilian sector there is always politics and BS, but the retention solution is to be good to people. I'd much rather have additional educational opportunities than haggle for cash. Money isn't everything, although I do get the feeling IWs are the lowest paid officers in the Navy, since everyone with a pin gets a bonus, Submariners make more than half my pay in bonuses, and even the Intel guys got an extra chunk of change. It is what it is though, and I didn't join the service for money.
- The disestablishment of the IW community should be seriously considered. Our only special skill is signals intelligence (SIGINT) and it is not unreasonable to take a portion of our community and lateral transfer them to intelligence (1610) to perform this function. Our information operations "specialties" are exactly the opposite. There is no schoolhouse to train IW officers for PSYOP, MILDEC, EW, OPSEC, or CNO and we do not have appropriate levels of qualification in these fields. Additionally, by pillar:
PSYOP—The Army's 4th POG performs all PSYOP planning and product generation. There is no Navy equivalent to this unit and we do not send officers through the 4-month PSYOP officer course because the Navy is not POM-specified (Program Objective Memorandum) to maintain a PSYOP capability.
MILDEC—The Army has the only school for MILDEC and the Navy is reluctant to send personnel through this training. We do not train and certify tactical units (ships and aircraft squadrons), the primary implementers of military deception techniques. Additionally, Navy MILDEC equipment is lacking for electromagnetic and acoustic deception.

EW—The ECMO community is separate from the IW community. The installation of an O5 lateral transfer ECMO as CO of Whidbey Island speaks to our lack of knowledge in this field. And while we have “supported” the Army with EW on the ground by providing personnel, they are actually going in with minimal training. Such a task could have been performed by URL officers given the same training.

OPSEC—This should be practices and certified by all units – we bring no special skills or training to the table for the implementation of OPSEC. OPSEC planners should report directly to commanders and not be part of the N39 staff.

CNO—While there are dedicated Navy commands to implement different portions of CNO, there is no special training we bring to the table. Officers from other communities with appropriate short-term training would perform just as well. If you also factor in those officers who had computer science backgrounds regardless of designator and those who are interested in computers as a hobby, you would find a much more qualified and effective workforce.

If you add on concepts like “influence operations,” our potential contributions seem unique. However, in point of fact, there are no advanced degree programs available at NPS in regional studies – only technical majors. We allowed the three billets that were created to expire, and there are no additional spots on the horizon. Additionally, IW officers are highly discouraged from applying to Olmstead scholarships and a vast majority of PEP tours are not available to IW officers because we are restricted line. Throw in the lack of language training billets for our community and it shows that we are extremely weak in an area where we are supposed to be experts.

Then if you factor in the FAO community stand-up, there is really no place for our “influence operations” “special skills” that we actually do not possess.

- Job satisfaction is key. People need to feel like they have the tools and the ability to make a tangible difference.
- Many of us are technically oriented, so providing more billets that actually use our skills would help improve job satisfaction. Also putting people into billets based on the skills they actually have, vice family or geo-locational desires or needs. Doing a better job of screening senior officers for leadership billets would also help. Again, due to the community attracting officers with a technical bias, many are lacking in leadership and people skills. Those types of people should not be in jobs that include developing JOs, or Sailors in general.
- People do this job for different reasons. As long as my skills are used in a meaningful way, I plan on staying with or without a bonus. I am more worried about getting stuck in a remedial job in order to get a check-in-the-box than having a high tempo. I have yet to meet someone in the IW community that minds deploying - but I have met plenty who get back stateside (when they expect to have more time with their families) and get stuck in a 12 hour day doing remedial tasks. No one enjoys a constant crisis mode (must-have-these-stats-by-close-of-business-or-world-will-end) when they are back from deploying. If I got stuck in a job like that, I'd consider leaving no matter what money was offered. Also, an Information Warfare pin would be nice since it is a warfare like surface or subsurface.
- Advanced education in combination with follow-on billet/homeport of choice.

- Leadership billets. There are very few opportunities for command, and some of our largest commands are commanded by non-IW officers (NIOC Norfolk, NNWC).
- Lack of community focus has been a major source of consternation in the IW work environment. IW “community plans” have focused on trivial issues such as warfare pins and retaining antiquated core competencies instead of how to embrace the full IW scope, alter/improve educational opportunities, and (most importantly) move into warfighter posture.

Junior officers question where we are going and the competency of our leadership because previous “vision” documents have not been about refocusing to meet tomorrow’s challenges but about how to hold on to what we have. Further, our continued deference to URLs as ultimate NETWAR leadership demonstrates that our leaders are unwilling to step forward, acting as the “reluctant bride” instead of the “white knight.”

- I am highly motivated by training, and the opportunities for technical leadership. Better-defined career paths would help reduce the uncertainty in the detailing process.

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